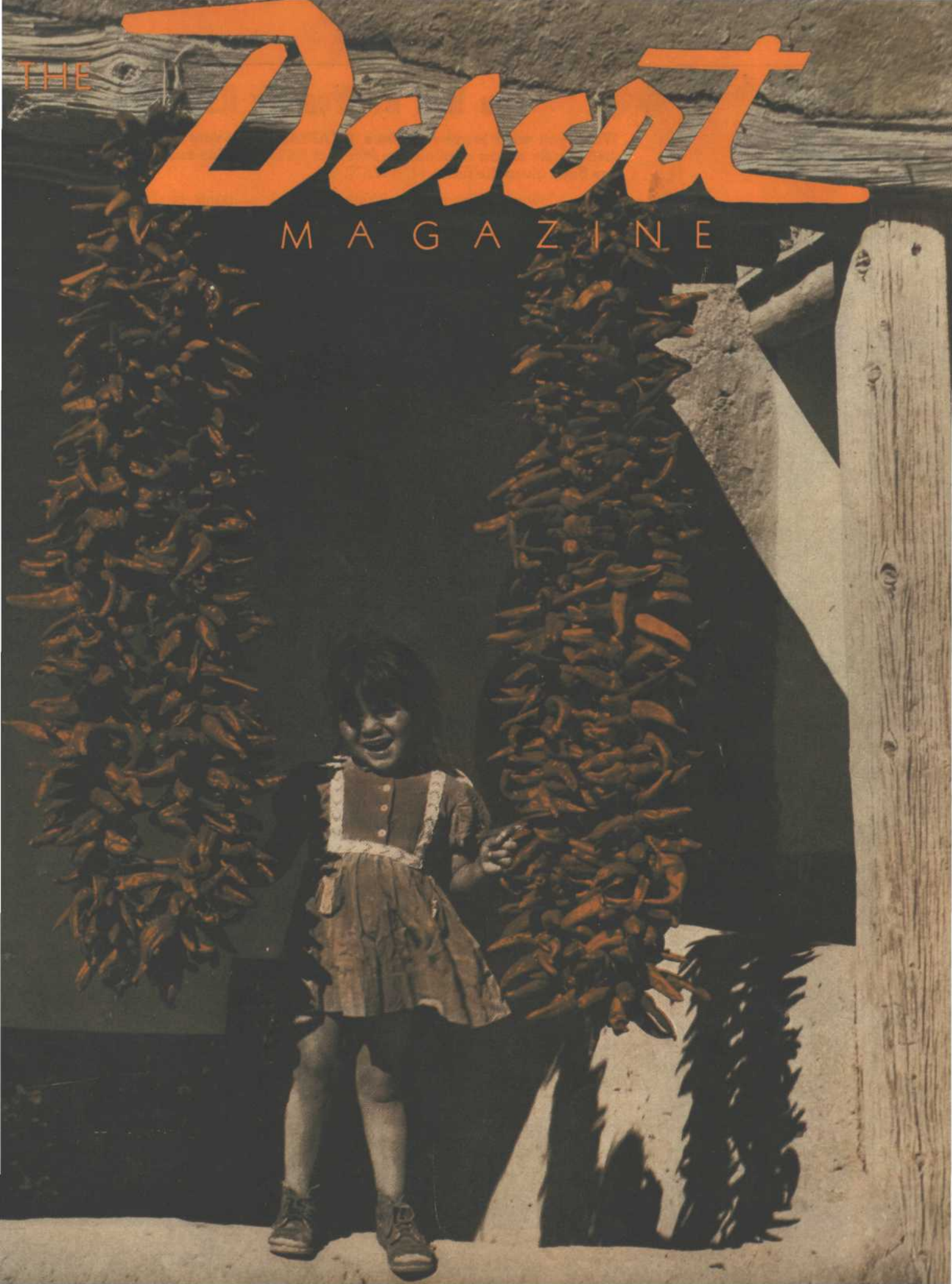


THE

Desert

M A G A Z I N E



SEPTEMBER, 1950

35 CENTS



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DESERT CALENDAR

- Sept. 1-2—Iron County Fair, Parowan, Utah.
- Sept. 1-2—Box Elder County Fair, Tremonton, Utah.
- Sept. 1-2—Morgan County Fair, Morgan, Utah.
- Sept. 1-4—Nevada State Fair, Fallon.
- Sept. 1-4—Elko County Fair and Livestock show, Elko, Nev.
- Sept. 1-4—238th annual Santa Fe Fiesta, Santa Fe, N. M.
- Sept. 2—St. Stephen's Feast Day and Corn dance at Acoma pueblo, N. M.
- Sept. 2-3-4—Tooele County Fair, Tooele, Utah.
- Sept. 2-3-4—Annual Nevada Rodeo, Winnemucca.
- Sept. 2-3-4—16th annual Homecoming and Rodeo, Bishop, Calif.
- Sept. 2-17—Arizona Photographers eighth annual exhibition, Museum of Northern Arizona, Flagstaff.
- Sept. 4—Annual "Roaring Fifties" barbeque and dance, Barstow, Calif.
- Sept. 4—Rodeo, Williams, Ariz.
- Sept. 4—Railroad Day celebration, Winslow, Ariz.
- Sept. 4-6—American Meteoritics society convention, Flagstaff, Ariz.
- Sept. 7-8-9—Annual Lincoln County Fair, Pioche, Nev.
- Sept. 7-8-9—Southern Utah Livestock show, Cedar City, Utah.
- Sept. 7-8-9—Juab County Fair, Nephi, Utah.
- Sept. 9-10—Annual Lucerne Valley Days celebration, Calif.
- Sept. 15-17—Union County Fair, Clayton, N. M.
- Sept. 15-17—San Juan County Fair and Rodeo, Farmington, N. M.
- Sept. 15-17—Yavapai County Fair, Prescott, Ariz.
- Sept. 15-23—Utah State Fair, Salt Lake City.
- Sept. 19-22—Roosevelt County Fair and Rodeo, Portales, N. M.
- Sept. 23-24—Fourth annual Rodeo, Barstow, Calif.
- Sept. 23-Oct. 1—New Mexico State Fair, Albuquerque.
- Sept. 27-30—Quay County Fair, Tucumcari, N. M.
- Sept. 29-Oct. 1—Coconino County Fair, Flagstaff, Ariz.



Volume 13

SEPTEMBER, 1950

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Coachella Dunes. Photo by A. Wiederseder, Altadena, California.

Deserts Grow

By EMMETT H. ZILLES
Hollywood, California

The fluted sands form lacy hands
Which finger arid rills.
And find their place with careless grace
Afoot the distant hills,
Where Ridge and sky catch breath and eye,
To shimmer mile on mile
O'er rolling space that changes face
By magic desert guile . . .
A lake appears in levelled tiers
To vanish as you look
And casts a spell that's hard to quell
Within your mem'ry book.

The dunes have grown, billowy blown,
By gusty blasts of air
Which carved the butte, serene and mute,
And left it standing there
A sentinel, which could but tell
The lore of ageless time
And make one see the majesty
Of nature's chore sublime,
Or bear the thought of what's been wrought
By Him with ways so odd . . .
Thus, you should know why deserts grow,
That is—if you know God.

WHILE CAMPFIRES GLOW

By MARY PERDEW
Santa Ana, California

When shadows creep over the mesa
And night winds are humming a song,
Then campfires gleam bright by the hogans,
And wood smoke comes drifting along.
While copper-hued tribesmen rest calmly
And dream of days long, long ago,
Of legends brought down by old chieftains
To young men with hearts all aglow,
Of fleet-footed game fleeing swiftly
And hunters on fast-running steeds
Who brought back much food to the lodges;
Of brilliant and valorous deeds.
The campfires burn lower and lower,
The moon gliding slow to the west
While night winds lull gently to slumber
Nature's children, who sleep on her breast.

CEREUS BLOOM

By J. G. HANSEN
Santa Cruz, California

Night, and silence on the desert world
Of mesquite trees and sage. How still the
breeze
That went a moment since among the trees
And scattered fragrance in the shadows
curled.
Now, leaf by leaf, the cereus buds unfold,
And stems of close-gripped petals spread
until
The cacti are all starry lamps to fill
The desert aisles with perfume. None be-
hold
In midnight solitude the tender flowers
Of prescient dreams summoned from afar
To waste a miracle in darkling hours.
They lie upon the lonely dunes, and pale,
Companionate, there goes from star to star
A spirit singing in the desert vale.

DESERT SUNSET

By FAITH MURRAY NELSON
Taylor Ridge, Illinois

Nature vaunts her many dresses
For a jaded world to see,
Dips her brushes with carresses
In a well of mystery.

Splashes colors like an emery
On a canvas of delight,
Then erases all but memory
In the gentle hush of night.

True Worth

By TANYA SOUTH

I'd rather do my daily task
With courage, strength and will,
Nor other privileges ask
Save God's design to fill,
Than have much splendid world
renown,
And worldly power and pelf.
The one true spiritual crown
Is goodness in oneself.

DESERT PRAYER

By PAUL ELDRIDGE
Reno, Nevada

Twisted and writhen, the weird trees lie,
Raising their arms to the desert sky.
Nor cedar nor pine curved by inshore
breeze
Can compare in shape to the Joshua trees.

The desert farers avoid their touch,
Like men who walk where the sick may
clutch;
The beckoning mountains put on their haze,
And the desert nights succeed desert days.

What are they asking? What do they say,
Fixed in this attitude night and day,
Arms upraised to a sky of hate?—
Make us whole, they ask. Lord, make us
straight!

• • •

DESERT

By WAYNE L. JEFFERS
San Diego, California

Below the ragged mountain range
The desert's vast expanse
Sprawls in barren desolation,
Where tortured heat-waves dance.
And, now and then, the blazing breeze
Stirs gently through the sage,
And grotesque cactus sentinels bend
In weariness from age.

Yellowed mounds of sand keep shifting,
As if to hide from shame,
And wiry little lizards
Seek shelter from the flame;
The scrawny spider, all alone,
Frets in the stingy shade
Unmindful of the mockery
Monotony has made.

The merciless sun with searing fire
Thrusts deep its angry fangs,
And in the heart of tortured things
Ache awful torment pangs;
But nature in resourcefulness
Wages her defiant quest
For tangible deliverance,
In peacefulness, and rest.



On the 70-mile "boat trip" down the Escalante. Note the tapestried wall under the over-hanging cliff in the background.

When the Boats Wouldn't Float -- We Pulled 'em

This was scheduled to be a boat ride down Utah's Escalante River. But there wasn't enough water in the river—so the five members of this expedition spent eight days wrangling their rubber rafts over the shoals and rocks of a stream that just couldn't be navigated in the usual manner.

By RANDALL HENDERSON

Map by Norton Allen

SIXTEEN years ago the 20-year-old artist and poet, Everett Ruess, vanished among the red sandstone bluffs in the Escalante region of southern Utah. Months later his burros were found corralled in Davis Canyon, a tributary of the Escalante River. But no clue to his fate has ever come to light.

I never knew Everett personally, but I have learned much about him from his parents, Stella and Christ-

opher Ruess of Los Angeles, and in 1938-1939 when *Desert Magazine* published many of the letters written by Everett during the years when he followed lone trails in the Indian country of Arizona and Utah I grew very fond of this young vagabond of the desert wilderness.

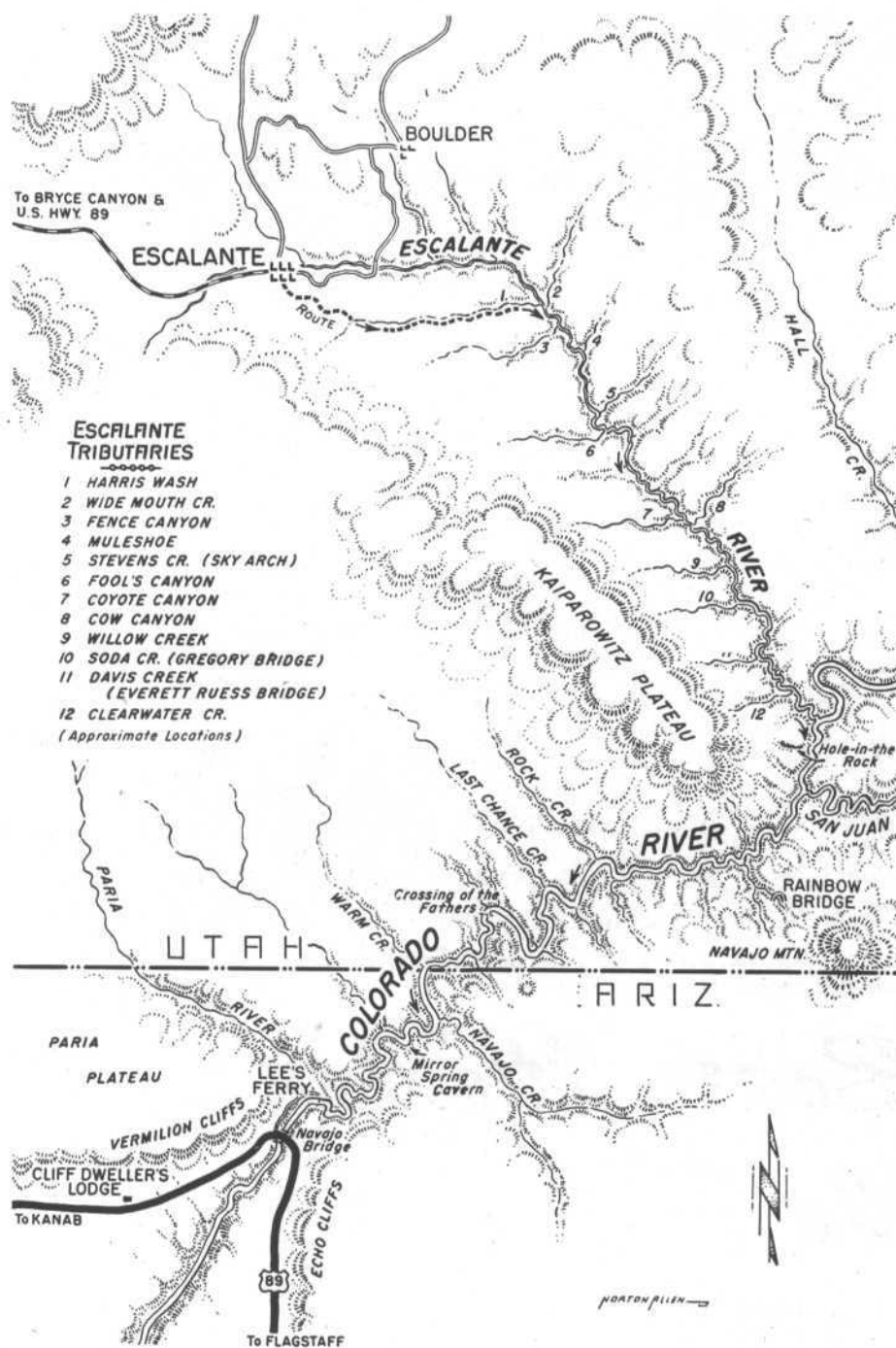
Like many others who are acquainted with the Ruess story, I have looked forward to the time when I could follow Everett's trail into that

Utah country, and perhaps visualize more accurately the difficulties which have attended the search for him.

Charles Larabee and Harry Aleson, Colorado River boatmen, opened the way for such an opportunity early this year when they invited Cyria and me to accompany them on a boat trip down the Escalante River to its junction with the Colorado, and thence through Glen Canyon to Lee's Ferry.

The date was set for June 4, and we estimated it would require 11 days for a leisurely journey that would cover 158 miles—70 on the Escalante and 88 on the Colorado. At the last moment Larabee found it impossible for business reasons to accompany the expedition.

Our rendezvous was Art Greene's Cliff Dwellers' lodge on the North



Rim road of northern Arizona, nine miles west of Navajo bridge which spans the Colorado at Marble Canyon. Mr. and Mrs. Greene and members of their family for five years managed the Marble Canyon lodge at Navajo bridge for Ramon Hubbell. Their family group includes two daughters, Ruth and Irene, and their sons-in-law, Verne Baker and Earl Johnson.

When their contract with Hubbell expired the first of this year they decided to venture into business for themselves. They acquired a colorful site at the base of Vermilion Cliffs near the entrance to Houserock Valley—and during the intervening months they have converted it into

a popular stopping place for motorists. Four luxuriously furnished cabin rooms have been completed, and a dining room is under construction. In the meantime Mrs. Greene and the girls have improvised a little dining room under a great overhanging rock and the entire family is making a glorious adventure of their pioneering enterprise. Their nearest supply point is Flagstaff, 127 miles away.

In addition to Harry Aleson, skipper of our expedition, our party included Georgia White of Los Angeles, an athletic woman of remarkable stamina as a result of years of cycling, skiing and mountain climbing, and Charles Lindsay, medical student at the Se-

venth Day Adventists' La Sierra college near Riverside, California. "Chuck" was second boatman, big and willing and a competent oarsman. For the rugged river trail ahead I could not have picked more congenial companions.

Our equipment was two 7-man rubber landing rafts, each with seven air cells. They weighed 230 pounds each, and our food and camp equipment added up to a load of nearly 600 pounds. These rubber boats are reported to have cost Uncle Sam \$1000 each—and are now being sold as war surplus at less than one-tenth of that figure.

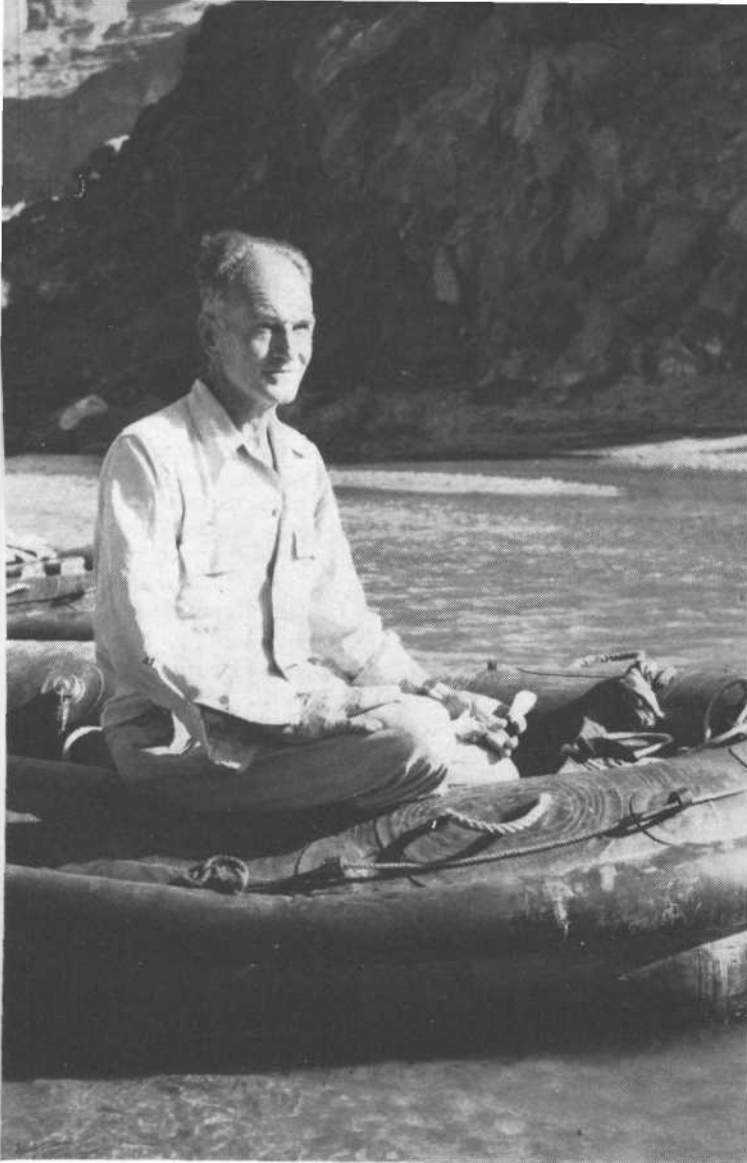
From Cliff Dwellers' lodge we drove north over highway 89 through Houserock Valley, Fredonia, Kanab and Glendale, and then followed a winding but well-graded road over the Escalante Mountains to the town of the same name. The elevation of the town is 5258 feet and the population slightly over 1000.

Escalante was colonized by the Mormons in 1875. Water was diverted from the Escalante River to irrigate a few hundred acres of the fertile land and the settlers grew abundant crops of potatoes. They called it Potato Valley, but later at the suggestion of A. H. Thompson, topographer of the second Powell expedition, the name was changed to Escalante, honoring the Franciscan padre, Silvestre Velez de Escalante, who came this way in 1776 in his quest for a new route from Santa Fe to the Pacific.

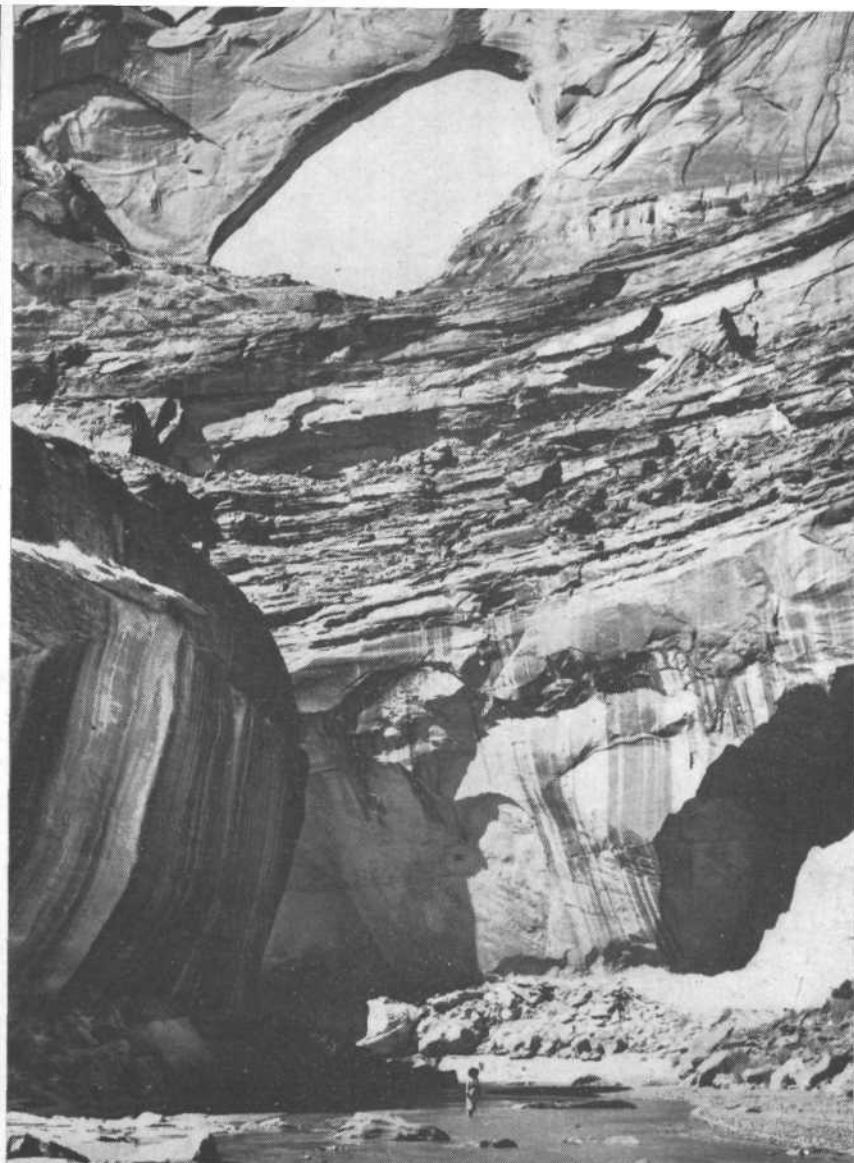
It was late in the afternoon when we reached Escalante and we found comfortable lodging in the home of Leslie George, assessor for Garfield County. There are about 5000 acres of land under cultivation here along the Escalante River, but the main industry of the community is livestock.

The cattlemen told us the stream flow in the Escalante was low this year due to lack of heavy snow in the mountains. The following day we drove down Harris Wash to its junction with Escalante River 32 miles east of town to see if there was enough water for the boats. The stream was disappointing but Harry Aleson expressed confidence that springs and tributary creeks below would add to the discharge as we continued downstream.

Another day was spent assembling food and other supplies for the expedition. The delay gave me an opportunity to talk with some local people who had become acquainted with Everett Ruess during the two days he spent here before he and his two burros plodded off into the canyon wilderness where he disappeared.



Harry Aleson—boatman in the summertime and lecturer during the winter months.



Skyarch—where countless years of erosion have created a window in the wall.

Everett was interested in the ancient cliff dwellings known to be located in many of the canyons in this region—Moqui Houses they are called by the local people. Some of them are now inaccessible due to erosion of the canyon walls below the overhanging recesses in which they are built. Everett was a fearless climber, and in his wanderings through the Indian country had more than once scaled walls which were regarded as impossible.

The young artist had camped on the river bank near town, and had taken some of the Escalante children to the picture show the night before he departed. On November 11, 1934, he wrote to his parents, "I promised you some pictures (water colors) and I am sending a few of them now as it will lighten the load, and they are getting travel-stained . . . I sold a few lately, but I hope you will like those I am sending. As I have more money than I need I am sending \$10, and I want each of you to spend five for something you have wished to have—books

or travel—but not for anything connected with any duty . . . Tomorrow I take the trail again. As I may not have a postoffice for a couple of months I am taking an ample supply of food with me."

He left the following day. A few days later he met a sheepherder and learned from him the directions for reaching Davis Creek. As far as is known that was the last time Everett was seen.

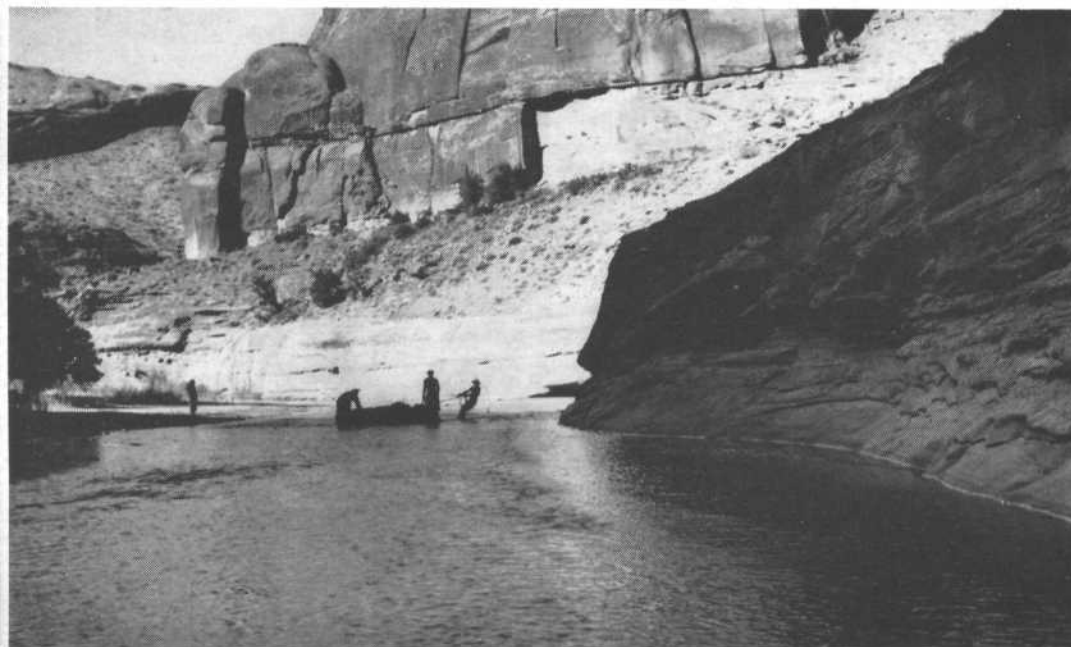
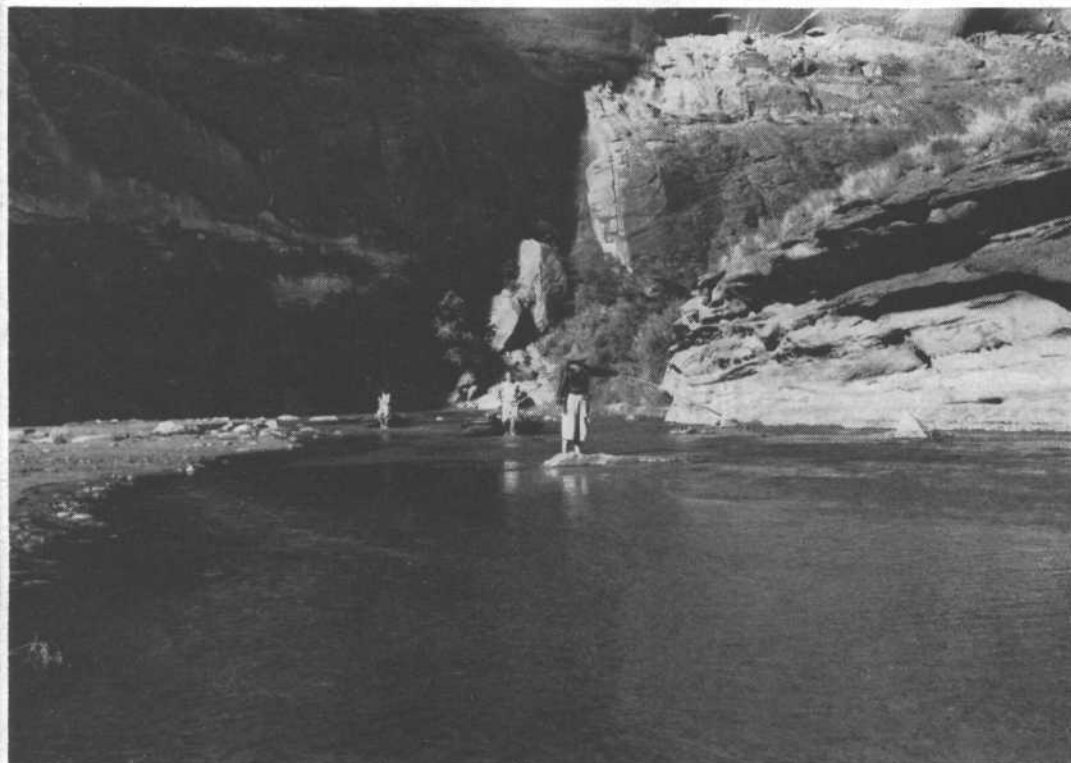
After two months had passed Everett's parents wrote to Mrs. Jennings Allen, postmistress at Escalante, and a widespread search was started by cattlemen and civic organizations in that part of Utah. Everett's burros were found along Davis Creek. The halters and pack-saddles were recovered. His bedroll, food, diary, paintings and artist's kit have not been found.

Mrs. Allen is still postmistress at Escalante. I talked with her and others who remembered the tall young artist who stopped for a few hours in their

town. They are as much in the dark as are Everett's family and friends elsewhere as to the explanation for his disappearance. There was a hint that he may have met with foul play. More prevalent is the thought that he may have cached his outfit for a few days while he backpacked off for a lone jaunt into the neighboring canyons, and that he had fallen while attempting to scale the cliffs to a remote cliff dwelling, and that his outfit had been covered with drift sand.

The great expanse of Kaiparowitz Plateau and the broad mesa adjacent to it between Escalante and the Colorado River are so broken with canyons and escarpments, the water supply so limited, and the trails so few that one could spend a lifetime exploring this region without covering it thoroughly. Where water is available the cowmen run stock in this region. The cowboys are the only ones who have any knowledge of the country.

We trucked our boats and equipment down Harris Wash to the Escalante River, and early in the after-



noon of June 7 had the rafts inflated and loaded for the journey. Cyria and I were to ride with Harry in the lead boat, and Georgia White and Chuck Lindsay were to follow. Since there were three persons in our boat we carried only 250 pounds of the supplies, the other 350 pounds being loaded in the second boat.

Some of the stockmen, using the lower Escalante as summer range for their cattle, were there to wish us a good voyage, among them Wallace Roundy, Floyd Gates and Edson Alvey. Edson teaches school in winter and punches cattle during his vacation. He has explored many of the Moqui Houses and is a student of the ancient Indian life of this region.

We shoved out into the current—and 50 yards downstream the boat grounded in a rocky riffle. We got out to push and pull the rafts over the rocks—and never returned to the boats as passengers for eight days.

The water that was expected to swell the stream flow as we continued our journey never appeared. The springs and side canyons were dry or provided only a trickle of water.

With one person on the tow-line of each raft, and another pushing on the stern, we wrangled those two boats over shoals and rocks for 70 miles. Between riffles there was generally enough water to float the boats without passengers, but these spans of navigable water were so brief that one member of the party remained on each tow-line almost constantly, wading the stream and always seeking a channel with the six inches of water needed to float the rafts. The oars we carried were never unleashed until we reached the Colorado River.

In many places the stream spread out over sandbars and the water became so shallow it was necessary to man each boat with a crew of four—two on the tow-line and two pushing at the stern, and drag the boat 10 or 20 yards to the next channel. Then go back and pull the other boat across.

Cyria soon found a job for herself in this new and unorthodox method of navigating a river. She became the official pilot of the expedition—the

Top—Junction where Harris Wash creek enters the Escalante. The boat trip started here.

Center—Cyria with her willow pole waded ahead to find the best channels for the boatmen.

Below—When the water spread out too thin over the bars, it was necessary to pull and push the boats across.

first woman pilot on the Escalante according to her boast. She waded ahead with a long willow pole, crossing and recrossing the stream to locate the best channel. Where the water spread over the bars, or trickled through the rocks in three or four or a half dozen channels, as it generally did, it became important for the boat-wranglers following behind to know where the best course ahead would be.

Thus we continued downstream, averaging nine miles in an eight-hour day for eight days. It was hard work—but I do not want to give the impression that it was a terrible hardship. Harry had stocked the commissary well, and we always made two mid-day stops for cold lunch and fruit juice.

Until the last day or two, our hopes were buoyed high by the expectation that side canyons would bring more water into the stream. We passed scores of them—Wide Mouth, Fence Canyon, Muleshoe, Stephens Canyon, Fool's Creek, Coyote Creek, Cow, Willow, Soda Gulch, Davis Creek and Clearwater — these are the names given to some of them by the cowboys—and there were many unnamed ones. There was a trickle of water in some of them, but not much more than enough to compensate for the loss from our stream by evaporation. So, eventually we reached the Colorado with not much more water in the Escalante than when we started.

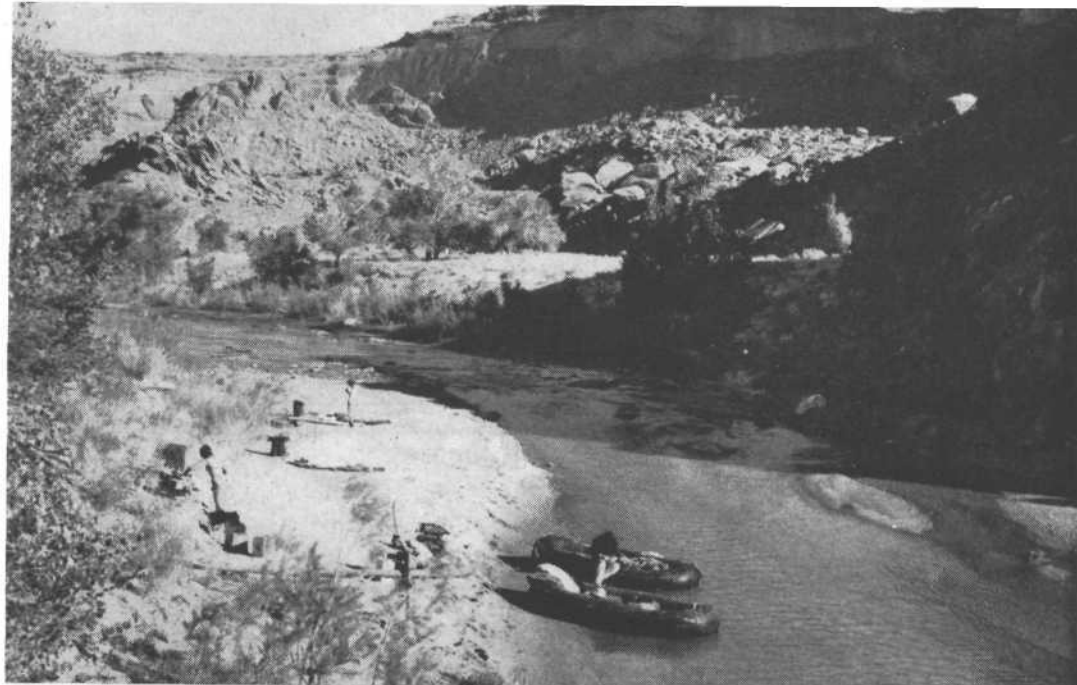
Four times along the way we made total portages. Great boulders blocked the way and we had to carry our supplies and equipment around or over the rocks, and then lift the boats out of the water and heave them over the barriers. There was some portaging at other places, but only four times were the boats taken from the water.

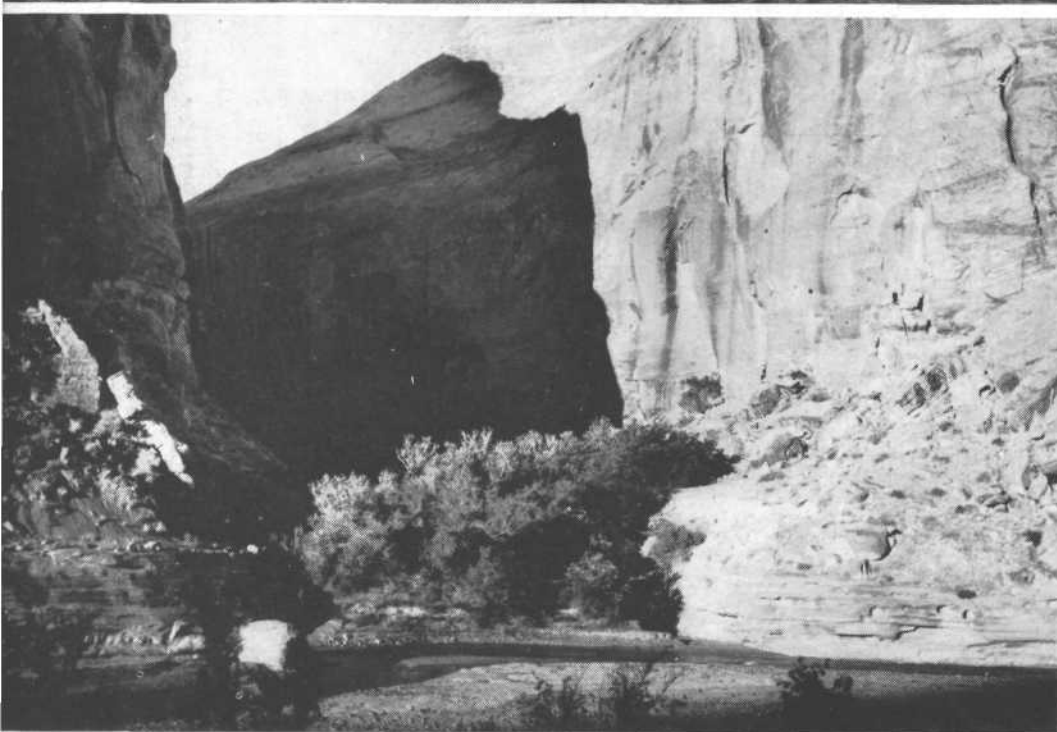
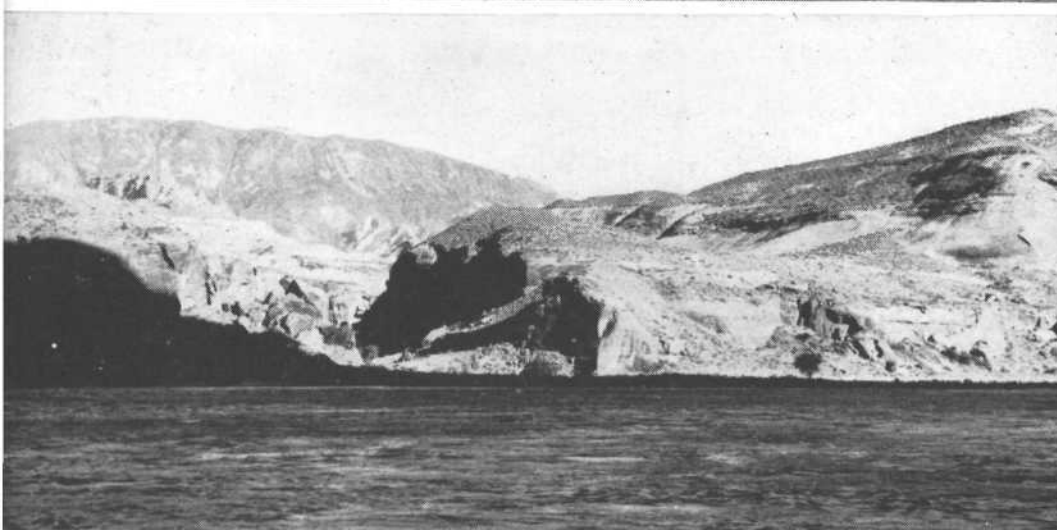
Perhaps in a less colorful setting the arduous labor of this journey would have made it a grim, dismal experience. But not in Escalante Canyon. The red Wingate and the Navajo sandstone walls which towered above us fringed with the deep green of junipers and pinyon were ever-changing backdrops of fantastic sculpturing.

Top—When evening came the voyagers beached their boats and unrolled their sleeping bags on a sandbar.

Center — Chuck Lindsay and Georgia White—after the party reached deep water at the mouth of the river.

Below—Members of the expedition, left to right: Chuck Lindsay, Randall and Cyria Henderson, Georgia White and Harry Aleson.





Top—Cliff Dwellers' lodge where Art Greene and his family are building accommodations for travelers.

Center—Entrance to Forbidden Canyon with Navajo Mountain in the background.

Lower—Entrance to Davis Creek canyon where Everett Ruess dropped from sight in 1934.

Occasionally we would see a small vertical oasis up on the sidewalls—and we soon learned that these splotches of vivid green marked the places where

little springs of cool water bubbled from the sandstone. Often we would stop and fill our canteens.

In such a setting, with congenial

companions—I never heard an unkind word, even when the going was very tough—we trudged along, dragging our boats and feeling that here was an experience which would leave pleasant memories long after the tired muscles had been forgotten.

At night we would spread our bedrolls on a sandbar. Daytime temperatures generally were above 90 degrees, but it was always cool enough at night to make us seek the warmth inside our sleeping bags. The temperature of the water when we waded out into the stream in the early morning averaged 54 degrees, but by five p.m. it would go up to 76 degrees.

We wore tennis shoes, and had to stop three or four times a day to empty out the sand which had seeped into them as we waded the stream. Chuck solved the sand problem by cutting the toes out of his shoes—and was sorry later, for his shoes began to go to pieces, and the sharp rocks punished his feet painfully.

The Escalante is a very crooked river, cutting a great serpentine canyon across the southern Utah plateau. Herbert E. Gregory and Raymond C. Moore who made a geological survey of the Kaiparowitz Plateau region for the USGS in 1925-1928 (Professional Paper 164, now out of print) reported that just above its junction with the Colorado the Escalante meandered 35 miles to cover a direct distance of 14 miles.

At many of the bends the erosion of many thousands of years had gouged out great caverns in the sidewalls, like huge domed amphitheaters. The vertical walls were streaked by the stain of soluble desert varnish to form great tapestries which ranged in color from black through a hundred shades of red and brown and tan to cream.

Occasionally we could see what appeared to be the ruins of old Moqui Houses high up in niches in the canyon walls. Like other cliff dwellers, the Moqui generally built of stone and mud, but with our field glasses we examined one well-preserved ruin 300 feet above us which appeared to be the stick-in-the-mud type of construction.

One morning, just below Fence Canyon tributary, we stopped to examine a wall the cowmen had told us about. It was covered with petroglyphs, the figures being similar to those found all through the Southwest. The Moqui are believed to be the ancestors of today's Hopi tribesmen. In fact the Hopis were known as Moquis to the frontiersmen who came West during the last century. One of the figures



Wrangling the rubber boats through and over the huge boulders which blocked the way.

I saw bore a close resemblance to one of today's Hopi kachina gods.

There was little evidence of wildlife, although deer are numerous in this region. We saw only one snake—a tiny rattler so young we could hardly hear the buzz of its two buttons. We saw one coyote and on two occasions were sure that birds soaring overhead were eagles. On the lower Escalante and later through Glen Canyon there was much sign of beaver, and once we caught sight of one of these animals as it ducked under the water. The warm water was full of minnows, but the only other fish we saw were suckers.

When we reached Stephens tributary we caught a glimpse of a great natural arch perhaps 500 feet above the river. On a previous trip Harry had given it the name Skyarch. Later when we reached Soda Gulch we beached the boats and hiked a mile up the tributary stream to Gregory Bridge, named in honor of Herbert E. Gregory who as a field scientist

for the USGS spent many years studying the geography and geology of this region.

Dr. Gregory had learned about this bridge from the cattlemen, but never saw it. He gave Norman Nevills directions for reaching it, and Norman and members of the Colorado River expedition of 1940 hiked up the Escalante River and found it. Since then a troop of Boy Scouts had placed a register under the giant arch. Aleson has made rough measurements, estimating the height of the span at 75 feet and the thickness of the arch at 114 feet.

The bridge is neither as large nor as spectacular as the famous Rainbow Bridge on the other side of the Colorado, and is very difficult to photograph due to the high sandstone walls which close in around it. We signed our names on the register and resumed our splashing journey down the channel of the Escalante.

At 5:30 that day we reached the mouth of Davis Creek. This is the

tributary where Everett Ruess' burros were found, 3½ miles upstream from the Escalante. Small cairns, placed on benches on both sides of the entrance by Harry Aleson, mark this creek.

I hiked up Davis Creek a short distance, and soon realized that Everett Ruess did not enter it from the Escalante River, for my way was blocked by great boulders which would have been impossible for a burro to surmount. Harry Aleson has spent much time exploring this region for some clue to Everett's fate. Two years ago he brought Stella Ruess, Everett's mother, into the canyon from the old Mormon Hole-in-the-Rock trail above.

Everett had gained access to Davis Creek by coming down over the slick-rock above on steps cut in the sandstone by cowboys to get stray cattle out of the gulch. Following Everett's disappearance, searchers found the word "Nemo 1934" incised in the doorstep of an ancient Moqui House in the sidewall of the canyon, and

again in a cave which evidently had been occupied by prehistoric Indians. Everett's parents are of the opinion this inscription was left by their son.

I had wanted to spend a couple of days exploring this area with Aleson, but Ol' Man River had been so stingy with his water supply that we were two days behind schedule and provisions were running low.

At two o'clock the following afternoon we rounded a bend—and there before us was a sheet of water a quarter of a mile wide. We were still a half mile from the Colorado, and this was backwater from the river in flood stage.

We waded on until the the water came to our knees, then for the first time on this boat trip fitted the oars in their locks and took our seats in the boats. The days of pulling and and pushing were over, and what a relief it was! We were tired, but otherwise no worse for the labor of the 70-mile obstacle course. It was one of those tasks you wouldn't do again for a thousand dollars—and wouldn't take a thousand for the experience.

This was Harry Aleson's third boat trip down the Escalante. On previous excursions he had found enough water in the stream to make it a comparatively easy run. He had even thought of scheduling this as an annual river trip for passengers. But the water conditions are too uncertain—and Harry told me at the end of our outing he had given up any thought of commercializing the Escalante.

Harry has been boating on the Colorado for many years. One evening as we were lounging on a sandbar after the day's run I asked him why he had chosen the rugged life of a riverman on the Colorado. His answer was in the soft-spoken words with which he always addresses those around him.

Born in Waterville, Iowa, of Norwegian parents, 51 years ago, he took his advance training in the engineering school of the Iowa State Agricultural college at Ames. Then for 17 years he worked as a geo-physicist, most of the time in the oil fields of Texas and Kansas.

In the mid-thirties when he learned a great lake was being formed behind the newly constructed Hoover dam, he decided that on his first trip West he would take a boat trip to the headwaters of the new lake in lower Grand Canyon. Later he got a position with the California Edison company, working on the highline that was to carry Colorado river power to San Diego. Whenever there was an opportunity he went to Lake Mead

for boating, and eventually bought his own boat with an outboard motor.

Just before the war he secured a position with the U.S. Reclamation bureau operating a mail and supply boat between Boulder City and the Bridge Canyon damsite where borings were then being made for bedrock. Later he became a lake pilot for Grand Canyon Tours, and in 1940, 1941 and 1942 towed the Norman Nevills boats across Lake Mead after they had completed runs through the Grand Canyon rapids.

After the war Aleson decided to operate his own river expeditions and moved to Richfield, Utah, as a base for his activities. He first met Charles Larabee, wealthy oil man of Encinitas, California, when the latter was a member of the Nevills Grand Canyon Expedition in 1940. In 1948 he met Larabee again under Rainbow Bridge when by chance both of them arrived there on separate expeditions. A partnership was formed as they sat and talked beneath the great multi-colored span of stone which is Rainbow.

Charles Larabee likes the river, and accompanies the boat trips when his business affairs will permit, but Aleson is the managing partner who pilots the expeditions and arranges the thousand and one details involved in booking schedules and securing supplies.

River trips with passengers are limited to spring and summer months, and Aleson spends the winter season filling speaking engagements with his color films of the canyon country. Harry denies he is a professional lecturer, but during many years on the river he has taken thousands of feet of 16mm Kodachrome film, and is always glad to show his pictures when invited to do so.

We had reached the Colorado, but were still 88 miles from Lee's Ferry. The rest of the run was easy. With a 60,000 second foot river running, and some help from the oars, it would be possible to reach our destination in a long day and a half.

Four miles below the mouth of the Escalante we pulled in for lunch at Hole-in-the-Rock crossing. (*Desert Magazine*, May '47). Here in 1879 a Mormon wagon train with 80 wagons and 240 settlers, on their way to establish a new settlement on the San Juan River at Bluff, spent three months getting their outfit from a high bluff down to the river's edge for a ford across the Colorado. They had to dismantle their wagons and chisel steps in the slickrock for the colonists and their horses. It was one of the most difficult and amazing feats in the his-

tory of the Mormon colonization of the West.

There is a fine spring just above the edge of the river, and the Utah Historical Society has placed a plaque here to commemorate the episode.

Ten miles below the Escalante we passed the mouth of the San Juan River, and 14 miles below that we glided past the entrance to Forbidden Canyon where river voyagers put in and land for the six-mile hike to Rainbow Bridge. Navajo Mountain, that great landmark of northern Arizona and southern Utah around which many Navajo legends have been woven, loomed in the background.

This is the Glen Canyon sector of the Colorado River, and there are many lovely side canyons here which are well known to those who have taken river trips in past years with Norman Nevills, and more recently with the Larabee-Aleson expeditions and those fine rivermen, Don Harris, Frank Wright, Jim Riggs, Jack Brennan and their boatmen.

These boatmen invariably take their passengers on side excursions into Hidden Passage, Music Temple, Mystery Canyon, Twilight Canyon, Forbidden and Bridge Canyons. With the exception of the last two these places are accessible only from the river.

There is nothing very graceful about the lines of a rubber landing boat, but they provide very comfortable seats for their passengers, and we were so relaxed and at peace with the world after our strenuous eight days on the Escalante that we were content to cruise along with the current until 8:30 that evening when we pulled into an inlet at the mouth of Rock Creek for our last night on the sandbars. The indefatigable Georgia who had cooked for the expedition prepared a delicious dinner from the last cans in the grub box.

Rock Creek proved to be a little bird sanctuary, and we were awakened at daybreak by a chorus of bird calls from the willow trees. As we had done many nights on this trip, we had spread our bedrolls beneath the lavender plumes of the salt cedar which grows luxuriantly along the banks of the Colorado and its tributaries, wherever there is sand for its roots.

We had breakfast at daybreak and were away at 6:30 on our last day's boatride. At 9:30 we stopped at the mouth of Padre Creek and waded the shallow water for less than a quarter of a mile to where Father Escalante on his historic trek across Utah had cut steps in the slickrock for a river ford at this place. There was a cairn

and register at the foot of the steps, and a plaque on the sidewall of Glen Canyon just below the entrance to the creek.

Because we were behind schedule we had to pass most of the scenic side canyons without stopping, but Harry had planned one special treat for our last day on the river. At eleven o'clock he pulled out of the main current and maneuvered the boat into a narrow slot in the sidewall of Glen Canyon. It is a place he recently has discovered, and has never appeared on any map until this month in *Desert Magazine*.

Our tiny inlet ended in a gravel bank 200 feet from the river. With our lunch boxes we hiked another 100 feet to where the passageway ended in a lovely domed amphitheater with walls so symmetrical they might have been carved by hand. These walls were draped with hanging gardens of maidenhair ferns. Beneath the dome in the center of this cool cavern was a round pool perhaps 25 feet in diameter with a circular bench of sand running around it. Every detail of the cavern, including the ferns, was reflected in sharp detail in this pool. Lighted only by reflected rays from the sun and unruffled by the wind, the pool, with a spring somewhere in its depths, was as perfect a mirror as one could imagine.

We ate lunch in this pretty spot, and then carefully picked up and carried away every scrap of waste, for it would be a sacrilege to leave any disfiguring thing in a place so exquisitely formed by Nature.

That afternoon we stopped at Sentinel Rock where it is possible to row in behind a great pinnacle that stands at the edge of the river and read the record where Bert Loper had incised in the rocks the dates of the many journeys he had made through Glen Canyon before his death in the rapids of the Colorado last year.

At five o'clock we saw the overhead cable over Lee's Ferry, where Jim Kloh, veteran engineer for the USGS, takes his daily ride over the river in a little tramcar and measures the stream flow. This information is important in the allotment of water to the states in the lower basin of the Colorado.

A half hour later we pulled in for a landing on the bank at Lee's Ferry, and the Escalante expedition of 1950 became for each of us another page in our book of experience—a page full of pleasant memories despite the arduous task of navigating a river that refused to be navigated in the conventional manner.

Desert Quiz

Desert Magazine gets many letters from the Quiz fans. Not many of the readers get top scores but all of them are learning. This monthly quiz really is an interesting lesson in the geography, history, botany, mineralogy, archeology and general lore of the desert country. A score of 12 to 14 is fair, 15-16 is good, 18 is exceptional. The answers are on page 39.

- 1—According to the most commonly quoted version of the Lost Pegleg gold legend, the gold was located: In a deep canyon..... On top of one of three hills..... Cached in an old mine tunnel..... In the sand dunes.....
- 2—Searchlight is the name of an old mining town in: Nevada..... California..... Arizona..... New Mexico.....
- 3—Bill Williams and the Mountain Men of the last century came to the Southwest primarily in quest of: Gold..... Beaver skins..... Homesteads..... Indian scalps.....
- 4—The City of Phoenix is located in: Imperial Valley..... San Pedro Valley..... Verde Valley..... Salt River Valley.....
- 5—The mineral most commonly sought by prospectors working at night with a fluorescent lamp is: Manganese..... Quicksilver..... Asbestos..... Scheelite.....
- 6—Common name for the desert shrub known as jojoba is: Rattle bush..... Goat nut..... Tumbleweed..... Crucifixion thorn.....
- 7—Most conspicuous species of cactus seen on the southern Arizona desert is: Saguaro..... Cholla..... Prickly pear..... Bisnaga.....
- 8—The Smoki people hold their annual snake dance at: Gallup..... Oraibi..... Flagstaff..... Prescott.....
- 9—Palm Springs, California, is at the base of: Telescope peak..... San Jacinto peak..... Mt. Baldy..... San Geronio peak.....
- 10—The historian who translated and published the diaries of Juan Bautista de Anza was: Lockwood..... Hunt..... Bolton..... Kelly.....
- 11—Hopi Indians use the kisi as a place to: Conduct their underground ceremonies..... Store grain..... Bury their dead..... Confine their snakes for the annual snake dance.....
- 12—The Kaibab squirrel found in the forest of the same name is identified by its: Black tail..... Brown tail..... White tail..... No tail.....
- 13—Grand Falls is in the: Gila river..... Salt River..... Little Colorado..... Mojave River.....
- 14—Survivors of the Cocopah tribe of Indians still reside near their original habitat: In Coachella Valley..... Along the lower Colorado river..... In Death Valley..... At the headwaters of the Gila River.....
- 15—Going from Monument Valley to Blanding or Monticello, Utah, the most important river you would cross would be the: San Juan..... Colorado..... Little Colorado..... Green.....
- 16—Most valuable product taken from the floor of the Salton Sink before water from the Colorado River submerged it in 1905-6-7 was: Gypsum..... Onyx..... Pottery clay..... Salt.....
- 17—Indian tribesmen who live on the reservation at Mescalero, New Mexico, are: Navajos..... Paiutes..... Apaches..... Hualpais.....
- 18—Going from the South Rim to the North Rim of Grand Canyon by the most direct paved route you would cross the Colorado River on: Topock bridge..... Lee's Ferry..... Navajo bridge..... Top of Hoover dam.....
- 19—Obsidian was used by ancient Indians mainly for: Making ornamental jewelry..... Arrow and spearheads..... Metates for grinding seeds..... Building cliff houses.....
- 20—J. Frank Dobie is a: U.S. Senator from New Mexico..... Author..... Commissioner of Indian affairs..... Champion cowboy.....



Obsidianites from the western shore of dry Fish Lake may be cut into lovely jewels of smoky-pink and translucent gray. Some are more than an inch in diameter, and specimens are plentiful.

"Volcanic Tears" on the Nevada Desert

By HAROLD WEIGHT
Photographs by the author
Map by Norton Allen

AS LUCILE and I looked down from the shoulders of Nevada's Silver Peak Mountains onto the shining, desolate chemical marshes of Fish Lake Valley, we tried to picture the scene as John S. Spears described it in 1892. Spears, visiting the borax workings here, saw numerous ponds of water—which he said lasted through the year—surrounded by vast beds of tules. It was a hunter's paradise: "Mallards, widgeons, teal, butterballs and what-not" were there in incredibly large numbers. Flocks of thousands filled the air by day and at night the bird-gabble never ceased.

In fact there were so many wildfowl around these Nevada marshes that often there wasn't enough water to go around. When even the smallest pools were filled, Spears tells us, the

ducks landed in crystallizing tanks of the borax plants where they paddled about happily through the night. The borax crystals formed rapidly at low temperatures—not only on the sides of the tanks as intended, but also upon all submerged portions of the invading ducks and they were too heavily laden to take off when morning came.

A variation of this phenomenon, it is claimed, furnished easy hunting for the Indians of the desert at other chemically impregnated lakes. At Keeler on Owen's Lake, for example, the birds became so encumbered with sal-soda that they could neither fly nor dive. "And there is no one in the world who enjoys his sport so well as a Paiute does when gathering in crystal-laden ducks."

Spears was an honest and able re-

porter. His rare "Illustrated Sketches of Death Valley and Other Borax Deserts of the Pacific Coast" is a vivid eye-witness account of the trails, people and industries of our desert at the close of the last century. Let it be noted, however, that he did not see the over-ballasted ducks himself. Francis Marion Smith, the borax king, told him about them, and "others confirmed it, and there is no doubt of it."

Present-day visitors to Fish Lake Valley need not expect to add these mineralogical wild-fowl to their collections. Now the marshes are dry most of the year. The thousands of wild game birds come no more. If they did come, there would be no crystallizing tanks to trap them. The

porters. His rare "Illustrated Sketches of Death Valley and Other Borax Deserts of the Pacific Coast" is a vivid eye-witness account of the trails, people and industries of our desert at the close of the last century. Let it be noted, however, that he did not see the over-ballasted ducks himself. Francis Marion Smith, the borax king, told him about them, and "others confirmed it, and there is no doubt of it."

borax mills are gone and nothing remains to mark their industry but glittering piles of waste, rusting metal and bits of timber, rope and cloth.

But this wild and colorful valley which lies along the Nevada-California line, across the White Mountains from Bishop has much to interest the desert-lover. For the photographer, there is the "Fire Hole," an area of vivid volcanic buttes and hills, and the "Sump Hole," a pale, miniature Bryce. For the historian there is another chapter in the story of desert borax. And for the rockhound there are thousands of beautiful smoky-pink little volcanic tears.

It was the interest collectors showed in the obsidianites of Bagdad on the Mojave (*Desert*, November, 1949) which recalled to my mind the quantities of the little volcanic glass nodules which I had seen in Fish Lake Valley while on a petrified wood hunt several years before. Lucile and I determined to re-visit the area to see how far the field extended.

From Southern California, Fish Lake Valley is one of the most easily reached spots in Nevada. Following the main highway up Owen's Valley to Bishop, we then took U. S. 6 through Benton, crossed the state line and climbed through spectacular mountain-desert country to Montgomery Pass (7150 feet). From the pass, the road runs swiftly down through Basalt and to Columbus Marsh, where the turnoff to the south was made. This turnoff, to paved Nevada Highway 3A, is 28.1 miles east of the Nevada state line and 6.1 miles west of the junction of Highways 6 and 95.

Fish Lake Valley is high, and summer is the best collecting time there. The obsidianite field itself has an elevation of about 5000 feet. In winter the great wall of the White Mountains may be cased in snow down almost to the valley. It's spectacular then, but cold. Even April nights sometimes have a sting, and it was late in May when I saw the flowers of the valley slopes in their full beauty: apricot mallow, lovely pale yellow scale bud, phacelia, verbena, evening primrose, spectacle pod and dyeweed.

We made our most recent visit in early September and even then there was a touch of snow frosting the very tops of the White Mountains. It was cold at night and hot in the daytime but collecting—even at noon—was quite comfortable. On that trip it was long after dark when we reached Highway 3A. Almost immediately after turning south—at .3 mile from Highway 6—we left the paving and angled to the left along a bladed road that headed for a break in the northwest end of the Silver Peak Mountains known as the Gap. A short distance through the Gap, and 3.9 miles from Highway 6, we pulled off the road onto a little bajada.

The moon was nearly full and camp-making was easily accomplished by its light. When the air-mattresses were inflated and the sleeping bags unrolled, I dug out my portable ultraviolet lamp and set out on a little fluorescent hunt. The moon was so brilliant it cancelled the effect of the lamp, and I had to examine specimens either in my own shadow or that of the truck. But I soon found many little

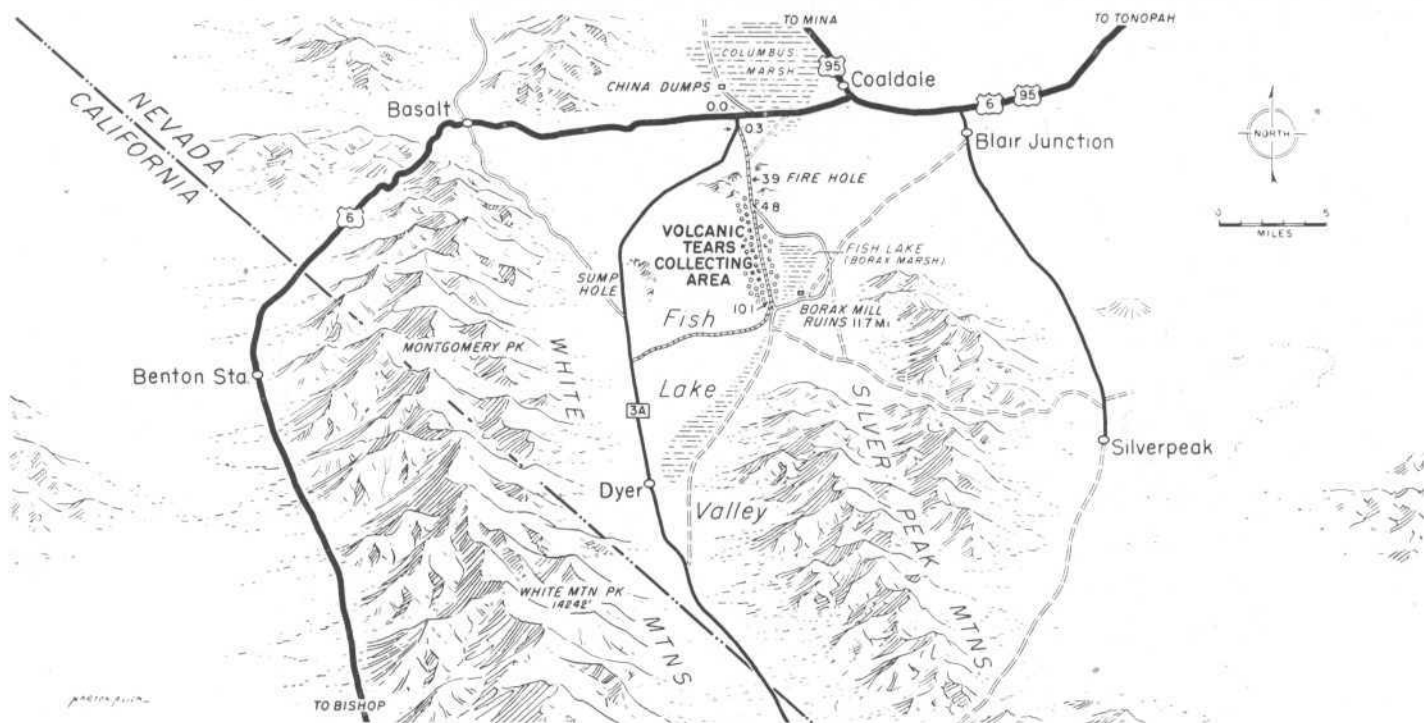
bits of chalcedony and a few opal that gave a green light under the ultraviolet. I determined to check in the morning to see if the specimens were float from the big butte to our west.

One of my most vivid remembrances of Fish Lake Valley was of the bright colors of the Fire Hole. In the early morning light, these colors were at their best. There are a few equally pigmented spots on the desert, but I do not know of any that excel the Fire Hole for intensity.

Lucile was busy, immediately, trying to figure out color names for the surrounding formations. Just across the road east of us was a peculiar conical hill for all the world like a modernistic lampshade—a black and chartreuse polka dot affair that belonged on a Chinese red table. Beyond was one that looked like red-chocolate sauce poured over buff-pistachio ice cream. A white hill was capped with rich brown.

We passed one butte of smoke-blue, cream, rose-buff and chalk. Near it another was red-rose, chalk, fire-red, black and bright brown. The violet grey and buff of a long ridge attracted our attention, and to the east still other buttes and ridges glowed with both brilliant and pastel colors.

It is no wonder the Fish Lake Valley country is so vivid. It has burned in the great furnaces of world-building for half a million years. According to H. W. Turner, who studied the geology of the region for the U. S. Geological Survey many years ago, volcanic action here began far back in the Paleozoic era with acid flows of lava. Then came a long period of compara-



tive quiet which was broken by the vast outflowing of rhyolite and andesite in the Tertiary age, less than 100,000,000 years ago. Action started again on a large scale in the Pliocene, at the close of the Tertiary, with eruptions of pumice and basalt—a disturbance which is believed to have continued far into the Pleistocene.

But volcanic action is not responsible for all the color and fascinating geology of the Fish Lake area. In middle Tertiary times the towering Silver Peak Mountains probably did not exist at all. A great lake spread over this whole region—Lake Esmeralda, Turner called it. Its broad basin reached from the White and Inyo Mountains on the west to the Montezuma Mountains on the east. Palmetto Mountain was its southern boundary, but how far to the north it stretched and whether or not it once connected with ancient Lake Lahonton, Turner did not determine.

When the Silver Peak range shouldered up from the old lake bed it arched and broke the lake sediments, thrusting some of them to the very tops of the new mountains and to an elevation of 7500 feet above sea level. It is in these lake bed sediments, which Turner called the Esmeralda formation, that scattered finds of beautiful petrified wood have been made.

After breakfast we broke camp and moved on toward the obsidian field. But before we left, we traced the fluorescent chalcedony float and found that it did come from narrow veins low in the southern side of the big butte just west of our campground. Here, too, we found a few small beautifully formed chalcedony roses. The material here in the Fire Hole is limited, but rockhounds checking similar formations should find interesting rock. They might also find some opalized wood in this area, but it has been well hunted over.

We continued south along the scraped road. When I had been in the Fire Hole last—several years before and much earlier in the season—Gap springs had been seeping and there was a tiny lake at this narrow spot. The contrast of its bright blue water, white salt margins and highly colored buttes would have tested the verity of any color film. However in September the little basin was dry, its chemically-saturated bottom spotted with a salt-loving grass.

Fish Lake is a long valley, extending across the state line to the south, and far into California. But the obsidian field and the borax playa we intended to visit are entirely within Nevada. We continued south to 4.8 miles from Highway 6. Here the bladed road divides. The left branch swings across

ROAD LOG

Fish Lake Valley Obsidianites

- 00.0 Junction of Nevada Highway 3A with U. S. Highway 6, 28.1 miles east of the Nevada state line and 6.1 miles west of the junction of U. S. Highways 6 and 95. Turn south on paved Nevada 3A.
- 00.3 Leave paving, angling left onto bladed road which continues almost due south for the Gap, a break in the colorful Silver Peak Mountains.
- 03.9 The "Fire Hole," spectacularly colored buttes and rock formations.
- 04.8 Road Y. Keep right (south) for obsidianites which may be found from this point on for more than 5 miles, especially on the right (west) of road.
- 10.1 Road Y which marks approximate end of obsidianite field. To continue to borax dumps, take left branch. Main bladed road angles right.
- 10.2 Road Y. Take left branch.
- 10.3 Two small bridges. Check condition before crossing. Then poor road heads east to:
- 11.7 Old borax dumps, boilers and foundations of Pacific Coast Borax company mill.

the upper valley, continues down the east side of the borax playa, then enters the mountains and eventually finds its way to Silver Peak. The right branch holds to the west side of the playa, then curves still farther west to enter the larger, inhabited portion of Fish Lake Valley where there are a number of big ranches.

This right branch cuts the obsidianite field, and we continued along it. We already could see the little shining blobs of volcanic glass to the west of the road. The material became more abundant and when we saw specimens right in the road, we stopped the car and started collecting.

The slope on which the volcanic tears occur here is largely composed of low rises made up of finely crumbled rock of a grey tone, and sandy washes between them. The obsidianites can be found both on the rises and in the washes and checking along more than five miles of the road convinced us that they number in the thousands. Most of them are clear and of cutting quality, and a great many have the pinkish tone which makes such lovely cabochons.

Besides the clear ones we found opaque black, banded grey and black and brown mottled specimens. We also found that when you face into the sun when hunting, it is almost impossible to see the little stones. Often we would decide that we had hit a barren spot but, when we turned back toward the car and the sunlight came over our shoulders, the volcanic tears

would sparkle up at us from all sides.

Probably these stones are the result of the later period of vulcanism here—when basalt and pumice was poured out. At least the volcanics of the area where we found similar obsidianites at Bagdad are supposed to be of recent origin. I am curious to know just how these beautiful little bits of natural glass are fashioned. A correspondent who read about the Bagdad stones suggested they might be tektites. Tektites are those small bits of natural glass found in various parts of the world which are believed to be of extra-earthly or cosmic origin. Most of them have shapes which might be the result of their having revolved through the air in molten state, and also are marked with odd little etchings, pits or flow lines.

None of the obsidianites which I have seen show these peculiar markings, and most of them do not have exactly the correct shapes. And while tektites have been found far from the scene of any volcanic action, the obsidianites seem always to occur near it. Besides, the volcanic tears are found over too-widely extended areas to be accounted for by showers from the sky, and their numbers are too great.

With all the specimens we wanted, we continued to the south end of the playa to examine the remains of the borax refinery there. At the Y 10.1 miles from Highway 6, where the main dirt road curves to the right, we took the left branch and kept left again at another Y .1 mile farther on. The road was little used and we found two small bridges in precarious condition, but crept across without trouble. Then we followed the poor road easterly and reached the borax dumps 11.7 miles from the highway. On old maps this spot is marked as the site of the Pacific Coast Borax Company mill. It is said that in the '70s the company had a village of 40 adobe and wooden buildings at its Fish Lake workings, with a population of 200.

Probably the borax playas of the valley also owe their origin to the volcanic past. Boric acid is released during volcanic action, and in this region it must have been collected in the sediments of old Lake Esmeralda. Then, when the lake beds were elevated and broken, the borax may have been leached out and re-concentrated in the present playas. It is found in the playa in the form of fibrous nodules of ulexite—called cotton-balls—and in 1873 several companies were working the Fish Lake deposits, one producing two tons of concentrated borax a day.

We left the truck and climbed onto the old dumps, our shoes breaking through the time-cemented crust. A



Bordering Fish Lake Valley on the west is the White Mountain range. Near its northern end is Nevada's highest point, Boundary Peak, elevation 13,145 feet. Farther south on the California side of the boundary the range attains an elevation of 14,242 on White Mountain.

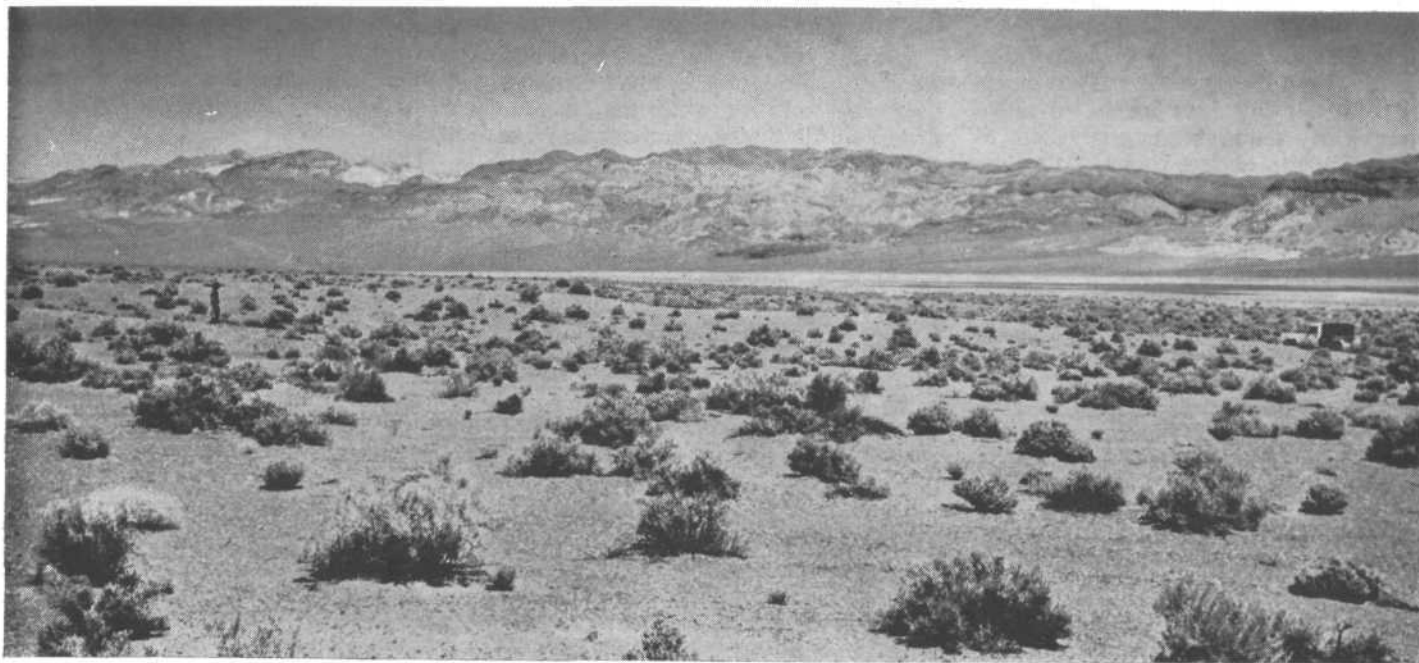
description of the workings of the Fish Lake mill was published in the *True Fissure*, a Candelaria newspaper, about 1883, and was preserved in the annual report, "Mineral Resources of the United States" for that year.

Today the production of borax is

big business. But when cotton-balls were being discovered in the Nevada desert marshes, it was a gamble that might pay off handsomely. High prices were being paid for the crude borax in New York, and the process of producing it was relatively simple.

It started on the borax marsh where laborers—often Chinese—scraped up the cotton-balls and mud with hoes and the impure mixture was heaped up in piles to dry, so that its weight would be less for hauling. Later, loaded into wagons it was hauled along the deep

Obsidianite field in Fish Lake Valley. For five miles and more these smoky-pink and black "nuggets" may be found along the western shore of the white borax flats. Silver Peak range in the background.





Little remains today to indicate the elaborate refining plant that processed borax near the south end of upper Fish Lake 70 years ago. Silver peak range in the background.

ruts to the dump. The dump was designed so that the struggling mules could drag the wagons right to the top, where the crude borax was shoveled into the dissolving tanks.

These iron tanks—Fish Lake mill had six of them nine feet in diameter and seven feet deep—were constructed with a pattern of steam pipes in the bottom of each. The pipes, perforated every four inches to allow escape of steam, were connected to boilers in the engine room. After the crude borax was dumped in and enough water pumped to the nearby well to bring the mixture to within two feet of the top, the steam was turned on and the soup permitted to boil and bubble thoroughly. Then the mixture was allowed to settle 10 to 12 hours.

Left alone, the impurities sank to the bottom. The comparatively clear liquid was siphoned into the crystallizers. Fish Lake had 45 of these smaller wooden tanks, lined with galvanized iron, built on a platform which was about 30 feet below the dissolving tanks. Here, as time went on and the solution cooled, the borax crystals formed on the galvanized iron, and

sometimes upon wires inserted for the purpose. The crystals were taken from the tanks, sacked and loaded into little cars upon which they were run into the drying shed. The solution in the dissolving tank often was run through many times before being run out into mud tanks or waste reservoirs.

Leaving the site of the borax mill, we continued eastward. The road was poor and soft for a stretch, winding through little sand hummocks and salt-encrusted shrubs. Then we climbed the slope, cut the Silver Peak road, and turned north along it. We followed close to the edge of the playa—first on its east, then north side—stopping once when we noted on our right some dumps and the foundation of a few buildings. Old square nails, bits of purple glass and champagne bottles were scattered in the debris. A few stubby chollas and thinly scattered salt weeds were the only vegetation in this sterile stretch.

Unable to sleep, I sat arms about knees as the moon soared, staring across the bone-white playa. Empty, desolate, dead, that white crust stretched to the insignificant, equally desolate dump of the borax mill. Be-

hind it gaunt bony mountains lifted their broken ribs against the night. There was no trace of lights, no sign of life, no whisper of sound. Strange that long before I was born this little corner of desert had boiled with human activity—and now was so empty and silent. Strange that even the wild things seem to have abandoned this bit of ancient valley.

The exuberant yodel of a coyote broke the mood. There was life in the valley. And after all, man had left Fish Lake Marsh through success in meeting the challenge of life. Once men had slaved long hours here in the desert heat for \$45 a month and board (Chinamen \$40, no board). They had lived in tattered wood and canvas shacks, mud and stone hovels—even in upturned iron tanks as you will see if you visit the China Dumps at the southern edge of Columbus Marsh. Their release lay in drinking, opium, gambling. How many had the heart, the spirit—the strength even—left to see or learn the beauties of the desert?

Borax still is mined and refined on the desert. But those who do it live in modern communities with the conveniences, recreational facilities and amusements of civilization. Their wages are higher, their hours of work lower. Yet the wholesale price of borax is less than one tenth what it was when the first California discoveries were made in 1856; less than a fourth its cost when these Nevada marshes operated.

And most of the desert dwellers today are there through choice, not necessity. And we of the cities envy them and come out to this wild land in the free time our fathers never had—to follow hobbies they never knew. While we may think we are roughing it—living ruggedly—in reality we have brought with us a multitude of the conveniences which modern life has brought us along with its evils.

That is as it should be. We cannot turn back the clock—we must select the good of modern life and combine it with the good of the past, rejecting nothing simply because it is new-fangled or old-fashioned. Sometimes in the cities it is difficult to do that, assaulted as we are by waves of manufactured opinion—constant yammer of commentators, politicians, salesmen whose existence depends upon keeping us from thinking for ourselves. Sometimes, with Pontius Pilate we ask: "What is truth?"

I have discovered no better place to find my own answer to that question—to find peace of mind where I can sift the chaff from the grain—than a lonely moonlit desert night.



Here are the Secrets—Frank and Peggy. They say their gamble has paid off.

"Frank and Peggy Secret had done what thousands of people dream about but few have the courage to do." This one-sentence resume sets the tone for an appealing story of a husband and wife—admittedly well into middle age—who longed to escape the tensions and regimentation of city life by making for themselves a new life on the desert where there is the freedom of vast distances and where human values mean more than material values. How they made their dream come true is told by a friend who watched from the start this experiment in living.

Gamble that Paid Off in Contentment

By WELDON F. HEALD

Photos by the Author

ONE MORNING last February as I rattled along State Highway 92 in the ranch truck, I saw the Secrets' station wagon parked beside the road ahead. Frank and Peggy stood by it with cameras set and were peering down the highway.

"What's up?" I asked as I pulled to a stop. "Expecting a parade?"

"Better than that," said Peggy excitedly. "Our house is going by in a few minutes."

"The store too," added Frank.

"This I've got to see," I said, easing out of the truck and ranging myself beside them.

It wasn't long before a distant roar grew louder and louder, then suddenly



This store in the desert has no problems of competition. Under management of the Secrests it has become a community center for ranchers, miners, farmers, cattlemen and even dudes from miles around.

around the bend in the road came a giant truck doing at least 50 miles an hour. On its broad back perched jauntily a white house with a green roof. It whizzed by us.

"Frank! Frank!" shouted Peggy, "I didn't have time to get a picture of it."

"Neither did I," said Frank, "but here comes the store. Get ready!"

Another truck, another who-o-sh, and the store flashed by.

Both Secrests feverishly snapped shutters at its rear end rapidly disappearing down the road, for this was an event in their lives worthy of record. And on those trucks was their gamble in a new country—southeastern Arizona.

There was no turning back now. Frank and Peggy Secrest had gone ahead and done what thousands of people dream about but few have the courage to do. They had sold their home and business in Pasadena, California, and bought a few acres in the little Arizona community of Palominas on the desert a mile from the Mexican border. There, 18 miles from the nearest town, they hope to live the rest of their lives under the peaceful, wide-spreading Arizona sky.

But the Secrests were not taking flight from work. Far from it. The war surplus buildings from Fort Huachuca which whizzed by us that February morning were eased onto foundations and converted into their home and the community's first general store:

the Palominas Trading Post, Frank Secrest, Proprietor. Now they find the world still very much with them, but it is a different kind of world with a life geared to those who make their living outdoors in the sun, wind, heat and cold of a semi-arid land.

The grand opening was in June. That morning Peggy finished painting the white buildings a smart combination of buff with orange trim and Frank installed the last shelf and piled up the final can. They stopped, a little out of breath, and looked at each other. It had been a tremendous job and already they had learned that on the desert you do many things for yourself if you want them done at all.

"This is it," sighed Peggy.

"Keep your fingers crossed," said Frank.

And together they turned and opened for the first time the door of the Palominas Trading Post.

The people came from miles around: San Pedro Valley ranchers, miners from the Huachucas, cattlemen, dudes from the guest ranches, and a sprinkling of newcomers from the East. They all ate cake and cookies, drank fruit punch, and admired the store with its shiny new counters, shelves, refrigerators and deep freezers. In fact, they stayed on to make the opening one of the biggest and most enthusiastic social events Palominas had ever known. The day was a success. Frank and Peggy went to bed tired

that night wondering whether a store in the desert was a practical proposition which would support them the rest of their lives, or just a beautiful dream spun out of wishful thinking. They had staked their future. Would they win or lose?

They didn't know through the long hot summer. But the Trading Post seemed to fill a need and almost immediately became a center of community life. Kids swarmed into the store at all hours for ice cream and pop, and customers materialized out of the empty Arizona landscape, made their purchases, and remained to sit on the broad porch out of the sun to discuss the latest developments in cattle, mining, crops, weather. Peggy's gift shop and lending library, which take up one whole side of the store, became a favorite meeting place with the women of the community. So by fall the Secrests and the Palominas Trading Post were a part of the life of our valley, and it is a little difficult to remember now how we got along before they arrived.

But life for these transplanted city dwellers in their new desert setting hasn't all been easy. In spite of station wagons, electric power, radios and butane, Frank and Peggy are pioneers—true descendants of the adventurous Americans who settled the old West. There have been hardships, setbacks, and times when the Secrests wondered why anyone ever thought this stark, uncompromising country was worth

taking from the Apaches. But after a hard day perhaps they would watch the sun set in a flaming sea of clouds behind the Huachuca Mountains, see the stars flash out like myriads of tiny searchlights in the darkening sky, and feel the silence of the desert night descend over them like a velvet cloak. Then they knew why they had abandoned the city to become pioneers in a new land.

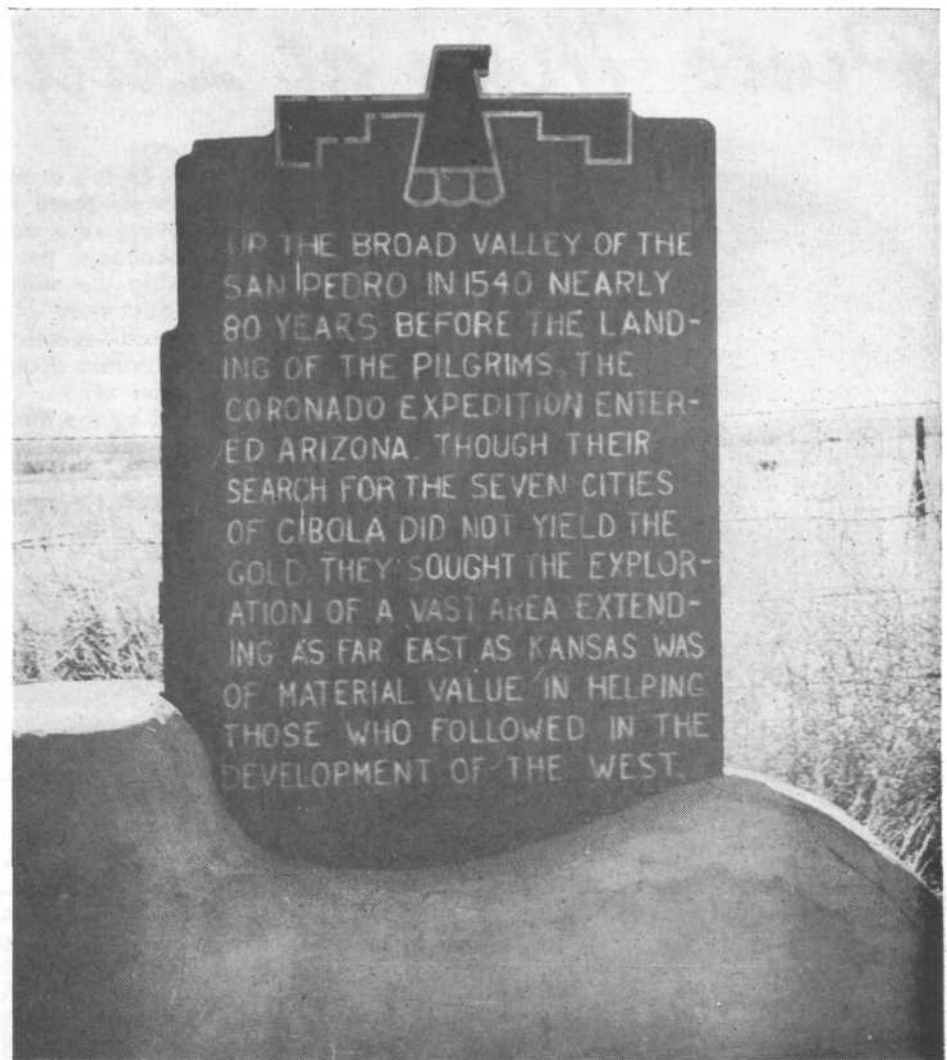
However, we bring our habits, like our furniture, along with us.

"I'll never be satisfied until the place is green and covered with trees," exclaimed Peggy who was originally a New Englander. Forthwith, she carefully nursed a little patch of lawn, put in a modest garden and planted fruit and poplar trees. All through the long hot summer Peggy watered and cultivated her miniature oasis. Then tragedy struck. A neighbor's cow wandered in, made a clean sweep of the flowers and cropped the foliage from the infant trees. That day Peggy would have exchanged all the open spaces in Arizona for one small city apartment with a potted geranium in the window. But the pioneer spirit wasn't broken. Once more flowers bloom around the house and the trees are bravely putting out new shoots inside cow-proof wire cages.

The San Pedro Valley was peopled 10,000 years ago by red-skinned progenitors of modern Indians, and it has a lively and picturesque background of history dating back four centuries. This land has seen resplendent Spanish conquistadores in shining armor; black-robed and brown-robed missionary priests; stalwart trappers in buckskin; bitter and bloody Apache Indian wars; hell-raising mining camps; cattle rustling and Mexican border skirmishes.

The Secrests are proud of the historical marker placed by the Dons of Phoenix on their property. Its inscription records that Coronado and his army passed through there in 1540 on their quest for the Seven Cities of Cibola. And Frank and Peggy like to believe that the great handsome negro, Esteban, and Fray Marcos de Niza too, cut cross their front yard a year before the Spanish Captain-General. Such events seem to identify the newcomers more closely with their adopted land.

The Secrests came from Pasadena where Frank had built up and operated a blind and window shade business for 25 years. They are friendly people and were always busy with social activities in the city. Frank has a fine tenor voice and sang in the Cauldron Club, while Peggy plays the piano and accordion. They were both



Frank and Peggy Secrest are proud of the marker in their yard which tells that Coronado and his army crossed this property 410 years ago in quest of the fabled Seven Cities of Cibola.

actively associated with a little theater. I asked Peggy what compensations she and Frank had for all they left behind them.

"It's hard to put into words," she said thoughtfully, "but we haven't missed the city. The people are friendly down here. We have our music too. There are parties, dinners, square dancing, radio and most of the other things we had. But the constant strain and hurry are gone and we're not tired all the time. And then," she swept her arm toward the valley, "we have that."

I looked out over the green meadows along the river where cattle grazed in the shade of great cottonwoods and willows. Beyond, the tawny desert stretched up to the bold promontories of the Mule Mountains shining red, brown, yellow and ochre against the blue sky. I could understand what Peggy meant, for this country has gotten under my skin too. But she is right—you can't put it into words.

SOCIETY TO EXCAVATE THREE INDIAN SITES

Permission to excavate three prehistoric Indian sites in the Prescott National Forest, Arizona, has been granted to the Yavapai County Archeological society, according to Harold Butcher, society president. The permit came from Washington through the Forest Service. Preliminary surveying is already underway.

After excavation, all specimens of archeological interest will be temporarily housed in the Smoki Museum, Prescott, until the society is able to provide its own quarters for display of the artifacts. Within 90 days after completion of active field work, a report must be sent to the secretary of the Smithsonian Institution, Washington.

The permit expires December 31, 1950, but if its terms and conditions have been satisfactorily complied with, it may be renewed for an additional period of one year.

Pinto Man at Little Lake . . .

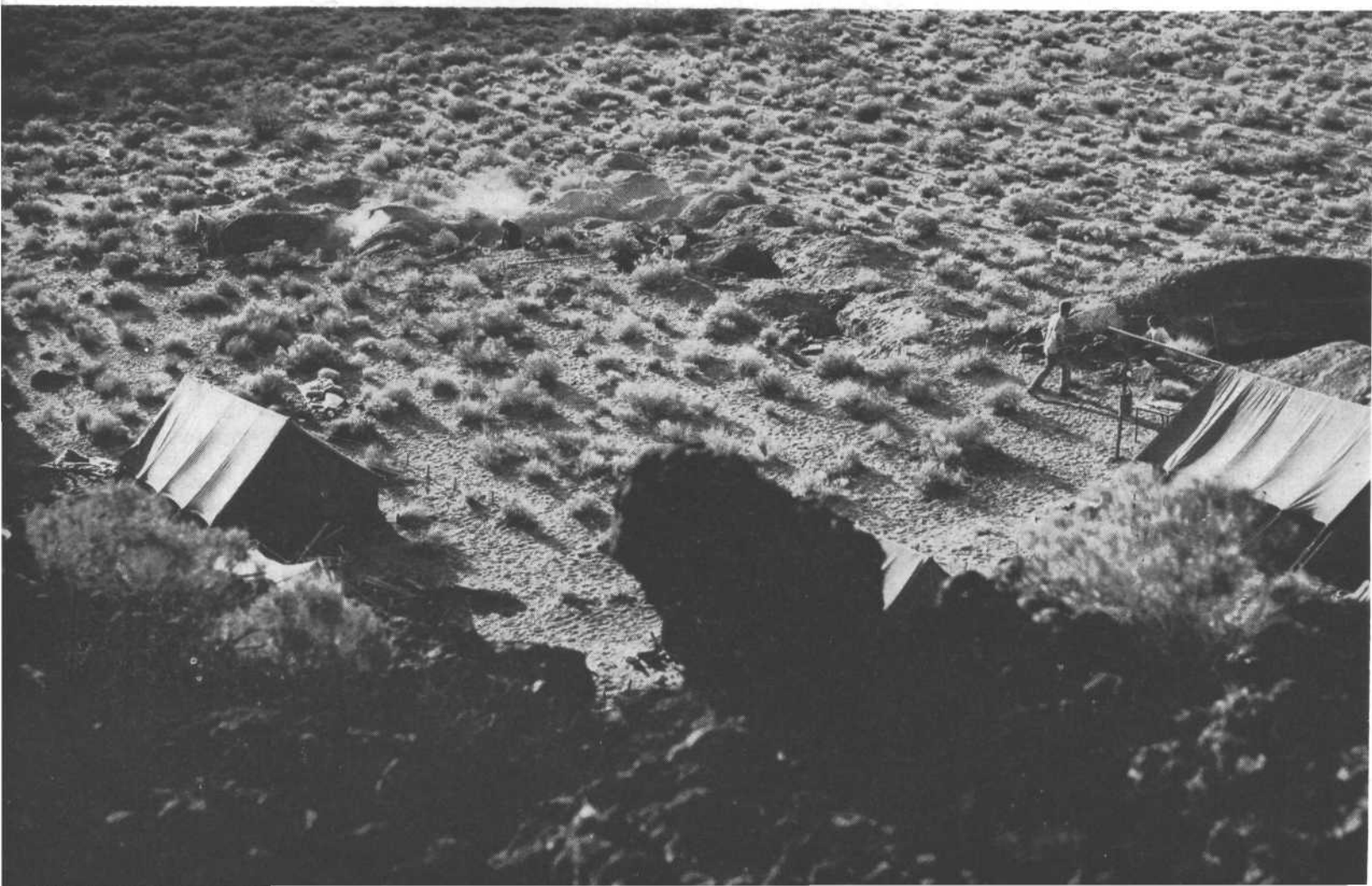


To the archeologist—amateur, arm-chair or professional—there is nothing quite as thrilling as the discovery of a new site which yields artifacts and other specimens preserved through the centuries to reveal today the story of pre-historic man. Here is the dramatic story of one of the most significant finds on record—a village site of Pinto man, who lived on the California desert thousands of years ago when forests stood where greasewood now grows. The story is told by the man who led three expeditions to excavate the site. He is Mark Raymond Harrington, curator of the Southwest Museum, Los Angeles. What Author Harrington doesn't tell is that it was on his suggestion that Willy Stahl, discoverer of the site, scouted that area as a logical spot where Pinto man might have lived.

By M. R. HARRINGTON
Photos by Gene Daniels
Map by Norton Allen

Left—Bandana-swathed Mark Harrington, leader of the expedition, has been curator of the Southwest Museum in Los Angeles for the past 21 years. Head-dress is protection against both dust and sun.

Below—Expedition campsite on the edge of the Mojave desert at the entrance to Owens Valley. Early morning sun cross-lighting the expanse of desert vegetation and the archeological diggings created each day a newly-beautiful spectacle. Workers camped right at the excavation so they could get to work early enough to avoid hottest hours of the day.



MY FRIEND Willy Stahl, professional musician and amateur archeologist, is usually rather undemonstrative. But when he strode into my office at the Southwest Museum in Los Angeles that November day in 1947, I could see he was bursting with news.

"What have you found this time?" I demanded.

"A Pinto village site—a big one—near Little Lake!" He really was excited.

I knew that Pinto referred to a very ancient people who lived in the desert region of California before it became a desert, thousands of years ago; and that they are called Pinto by archeologists because their stone implements, including spearheads, which are of peculiar shape and easily recognized, were first discovered in Pinto Basin, east of Twentynine Palms. This discovery was made by Mr. and Mrs. W. H. Campbell, back in the '30s, while exploring for the Southwest Museum.

Stahl should know what he was talking about, being Associate in Archeology at the Museum, but his news of a real Pinto village site seemed almost too good to be true.

"How do you know your village site is Pinto?" was my next question.

"That's easy," he responded. "I found only Pinto points on it. Look at these!"

He laid a handful of spearheads on my desk. Most were made of black obsidian, but otherwise they might serve as models for the illustrations in the Campbell report. They were Pinto, all right.

"How in the world did you locate the place?" I asked.

"I knew the Campbells' Pinto Basin site was on the banks of an old dry river bed; then when I saw that river bed in the valley north of Little Lake it set me thinking. Looking out over the valley I pictured the trees that must have been growing in the old days, and the river full of water. Then I figured where I would like to pitch my camp if I had been living then. These spearpoints came from that very spot!"

"They were all lying on top of the ground," he went on. "But I bet if we excavate we will find plenty more buried. I dug several test holes and found obsidian chips and broken implements in every one."

That made the find sound even better, for at the original Pinto Basin campsites the stuff had all lain on the surface, and I knew that if we found Pinto points on top of the ground, anything buried under them



The diggings. Dark curved shadow in the foreground was one of the important discoveries of the expedition. It is the foundation of a dwelling of the ancient Pinto people. Stakes show how excavation site is laid out in three-foot sections. Charles Rozaire, Culver City, California, is shoveling backdirt which has already been searched.

should be just as old or older. I decided to visit Willy Stahl's site without delay.

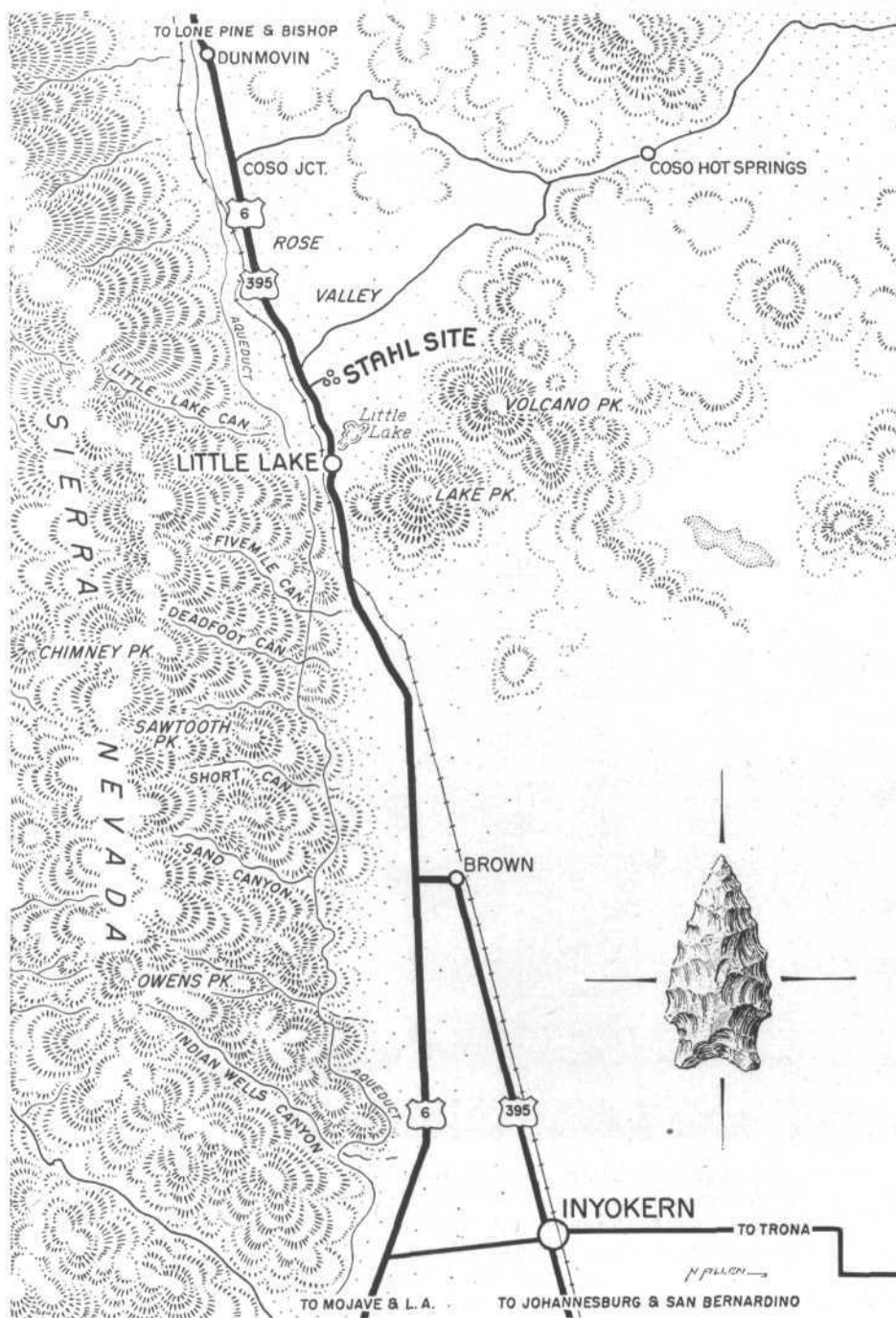
We followed the Bishop highway from Mojave about 60 miles, turning off to the right on a narrow winding side road two miles north of the Little Lake postoffice. At the road's end we halted, stepped out of the car, crawled through a wire fence.

"This is the spot," Stahl announced proudly. And a spectacular spot it was.

Across the valley east of where we stood stretched a long line of high black lava cliffs, above and back of which loomed a huge extinct volcano from which the lava evidently had flowed. To the west towered the high Sierras. The site itself was sandy,

brush grown and gently sloping down to the river bed which ran along the foot of the cliffs. It was protected somewhat from the wind by two ridges of lava which, I thought, must have squeezed up through earthquake cracks while the big volcano was erupting. On top of the highest stood a volcanic boulder resembling a human head, which we later dubbed "Joe Pinto."

Now I looked on the ground about us. It was dotted with thousands of flakes and pieces of black obsidian or volcanic glass, favorite arrowhead material of the later Indians. I noticed that most of these chips looked dull and weather-beaten, not bright and shining as on more modern Indian camp-grounds. These sure signs of



an ancient dwelling place were scattered over several acres, especially thick on the east and south sides of the two lava ridges.

It was east of the lower ridge where I found my first Pinto spearpoint. There it lay, big as life, near a little bush. It was rather thick, crudely chipped, with a deep notch at the base—the genuine article. I called Stahl and we stood and admired it before I picked it up. Then I took my trowel and dug in the very spot where it had lain. The soil was full of obsidian chips, and about 20 inches deep I found an obsidian scraper such as the ancients used to remove adhering tissue from the flesh side of animal skins before tanning.

Right then and there I made up my mind that this place should be excavated. I was sure it would yield not only a fine lot of specimens to display at the Southwest Museum, but much information on these early Californians who flourished in that remote age when our present deserts were well watered and green.

But who owned the property? We soon learned that it was T. J. Bramlette, proprietor of the Little Lake hotel, garage and restaurant, as well as much of the surrounding territory, including the lake itself. He lent us a sympathetic ear—and that part of the problem was settled. Bramlette not only gave us permission to excavate, but he and Mrs. Bramlette helped

us in many ways during all our work. To make sure we would not get into trouble if we strayed off the Bramlette ranch we also applied for and eventually received a permit from the Interior Department for the government land to the north.

Money was the next problem. You can't run an expedition without it, and museums these days have to depend on private subscriptions for such purposes. It was Mrs. Campbell, who with her late husband made the first discovery of Pinto man, who made the first contribution. Others chipped in, and by early March of 1948 we were able to set up camp.

Naturally we named the place the "Stahl Site" in honor of its discoverer.

Camping in March was not too comfortable, but with a little stove in every tent and firewood kindly supplied by Mr. Bramlette, we were fairly comfortable even if we were nearly blown off the map at times and sometimes were obliged to quit work and warm our fingers over the nearest camp stove.

Thanks to the labors of a number of enthusiastic amateurs who volunteered their services, we were able to stretch our funds and continue operations until July 15, when the weather became too hot for comfort; then to return in the fall and work on until late in November.

In 1949 we worked only through June and July, having a group of graduate students from the University of California at Los Angeles to assist during most of the latter month, three girls and three men, with Miss Agnes Bierman of Santa Monica as leader.

I shall always remember the dignified gentleman, owner of a pit mine, who paid us a visit after news of our finds had come out in the papers.

"I noticed in the press that you are doing some excavation work here, and I stopped in to see if you did not want to borrow some of our equipment," he said.

"What kind of equipment?" I asked.

"Why, bulldozers of course!" came the unexpected reply.

I went into my tent and brought out a five-inch pointing trowel and a cheap paint brush, trying hard to keep from laughing.

"We do all of our excavation with these," I assured him. "We use shovels only to throw out the dirt after it has been searched through with a trowel. The brush is used to clean off the specimens when we find them."

He could hardly believe it, but such was the fact. First we laid out a trench six feet wide and as long as seemed practical, then marked it off

into three-foot squares which were numbered for identification. Then we began at one end and dug the whole thing, from surface to barren subsoil with small trowels. When a spearpoint, scraper or other specimen was found it was carefully recorded as to depth from the surface and its position in a particular square, all of which was written on a label and wrapped with the article itself.

The amount of careful work that this demanded can be understood when I say that in two seasons we dug 11 trenches from 40 to 70 feet long, ranging from an average of 2 or 3 feet deep to a deepest point of about 8 feet. And during this digging, which included also a small cave near the northwestern edge of the site, we found between 4000 and 5000 recorded specimens! Many of these were broken or unfinished, but all were made by the hand of man and all helped to tell the story of these early Californians.

That Pinto man was dependent largely on hunting can be told from the large number of spearpoints, hundreds of them, that came to light. Some were big and doubtless used on hand-spears or lances; but most were smaller, made for javelins or darts probably hurled with the throwing-stick or spear-thrower, known to archeologists by its Aztec name of *Atlatl*. A number of pictures of *atlatls* may be seen pecked into the surface of lava boulders about half a mile from the village site. Whether these were made by Pinto people or not we have no means of telling.

An idea of the ancient hunter's difficulties is furnished by some points found on the site, that have been broken and crudely resharpened. We can picture Mr. Pinto's disgust when his pet dart struck a rock and shattered its point. He rechipped this as well as he could in the field, in case he should meet a grizzly on the homeward trip; but once in his hut he stripped the mangled spearpoint from its shaft and threw it out into the brush, replacing it with a good one.

All through the deposit were bits of animal bone, mementos of the game brought in by the Pinto hunters and eaten by them and their families; but few are large enough to identify. Later we shall have them studied. Perhaps we shall find that our friend might have met a saber-tooth instead of a grizzly.

Arrowpoints? There were only half a dozen or so found on the whole site, all on or near the surface, left by modern Indians. Archeologists have evidence that the bow and arrow was unknown in the Southwest until the early centuries of the Christian Era, and this Pinto site is far older than that.

We found plenty of evidence that the people of this village did not live entirely upon meat. We unearthed dozens of crude grinding slabs or metates, and fragments of them, together with their manos or hand-stones, so we can be sure Mrs. Pinto gathered plenty of seeds and pine nuts to grind. She probably cooked her mush with hot stones in a water-tight basket, as many

California and Nevada tribes have done until lately, for pottery was not known in her day.

The products of Pinto handicrafts, except stone, have perished; but we know they must have worked in wood because we find crude stone drills that could have been used only for that purpose, and concave scrapers useful only for shaving down spear or dart shafts. There were no axes, only stones with a crudely chipped edge, held in the hand, for breaking up firewood.

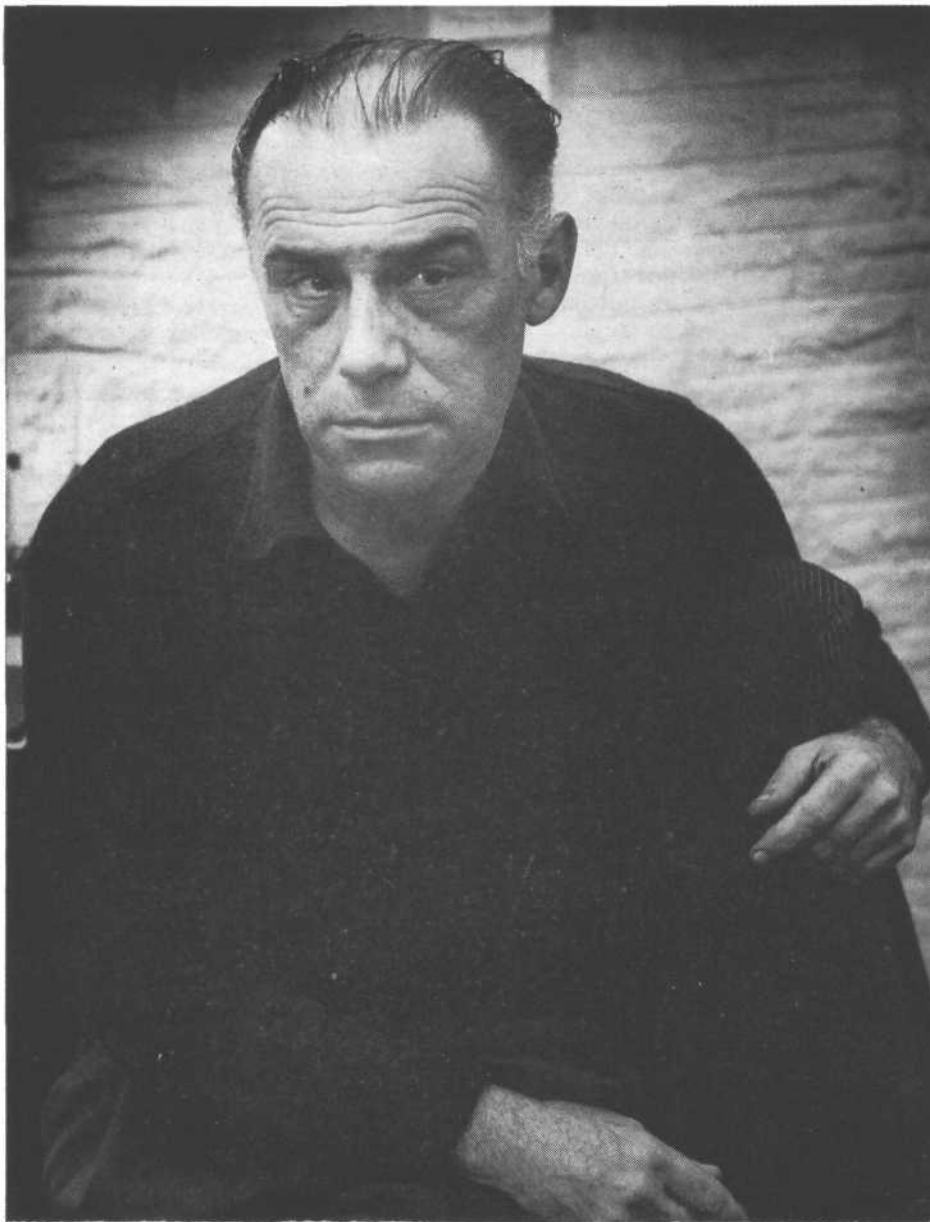
Work in skins we can infer from scrapers such as were used by later tribes in preparing hides for tanning, and by awls of bone used for sewing skins. The making of string can be guessed from stone implements apparently used for shredding bark to get the fiber.

Because stone does not decay, we have a more complete story for that material. Obsidian was the favorite material for all kinds of piercing, cutting and scraping implements, although chalcedony and chert, even quartzite, rhyolite and shale were not ignored. Most of the obsidian came from an outcrop on a mountain side some seven or eight miles to the north. It was chipped into form with hammer-stones of various sizes, some small ones having a narrow edge for putting the finishing touches on spearpoints. We found all kinds of obsidian implements in various stages of making, so we know pretty well how the work was done.

While digging test holes on a hill

Petroglyphs on lava talus were found a half mile from the Pinto campsite. They are attributed to more recent Indians.





The discoverer—Willy Stahl—in whose honor Stahl Site was named.

near the main site, Stahl found several dozen flakes of obsidian large enough to make dart-points, together with some hammerstones showing plenty of wear, all bunched together. Probably some man from the village had made the long hike to the quarry and searched laboriously for a good outcrop, as much of the obsidian is impure—full of little pebbles like marbles. Then he knocked off his flakes, loaded them with his hammerstones into his sack and carried them all the way back to the village, figuring on making himself some nice dart-points next day. Then for some reason he laid them down on that hillside—and never came back.

We think of the Indian as a great lover of ornaments, but our Pinto people had none. If they did, the things were made of perishable materials. In all our digging at Little

Lake we found no ornaments at all, except two crumbling sea shells, pierced for stringing. Paint was another matter, as five or six pieces of soft red stone, showing grinding, plainly testify. Whether Mr. Pinto painted his face or his belongings or both we have no means of telling.

All these things were helpful in trying to picture the life of that long vanished day. But the thing that really aroused interest was our first Pinto house—heralded in the press as the “oldest human habitation yet found in America.” This would have been correct had they added “outside of caves” and if they had made it “America north of Mexico.”

It was a simple thing, merely a line of post-holes outlining a small roughly rectangular hut with doorway to the east. But we were certainly glad to learn something, if only a little, about

a California home in that distant day. It was found by one of our volunteers, B. E. McCown of San Diego, an amateur archeologist who with his family was helping us over the Fourth of July holiday in 1948.

There are two layers or strata in the deposit over the greater part of the site: an upper loose sandy layer about 20 inches deep, more or less disturbed by wind and water action; and a lower one, darker and more compact, extending down to the barren gravelly clay which formed the surface when the Pintos arrived on the scene.

McCown had removed the upper layer over a small area when he noticed a small soft spot in the harder lower one. He paid little attention to it at first, thinking it to be a root hole or animal burrow. Soon he found another and then another, all about the same size, the same depth and about 14 inches apart—and all three in line. Then it dawned upon him that the soft spots might represent post-holes. Others helped him remove the overburden as he followed the line of post-holes around. In a few hours the first Pinto house site had been uncovered. It measured approximately 8 by 13 feet.

The only special feature in connection with the house was a garbage hole outside near the southeast corner. This was packed full of animal bones, all splintered to extract the marrow. Some can be identified, and when they are we shall know something of the diet of the hut-dwellers.

How the upper part of the house was constructed we cannot say; but the post-holes were vertical for the most part, so the walls must have been. The roof may have been flat, shed-type or arched; the covering skins, tule thatch or mats.

In 1949 we found two more houses, one similar to the first, but even smaller; the second circular, about 12 feet in diameter, composed of 22 post holes with the door opening, as usual, to the east. These post-holes sloped slightly inward; so this dwelling may have been conical-shaped like a teepee. Again Mr. and Mrs. McCown figured in this discovery. They and Mr. and Mrs. Stuart Peck of Santa Monica, assisted by other volunteers, uncovered the house.

This, too, had a special feature. The owner had buried his stock of obsidian flakes—hundreds of them for dart-point making—together with a couple of finished points in a hole back of his dwelling. We know they were his because the workmanship of the two points checks with those found inside and directly in front of the house itself.

What did Pinto man look like? That

is a hard question. We located three graves. In one, discovered by Stahl, there were only a few pieces, partly fossilized, of the long bones of a rather short, slender person. The second, found by Ritner J. Sayles of Bloomington, the most persistent of our volunteers, consisted of a mere handful of teeth and crumbs of bone.

The third, found in the little cave by S. M. Wheeler of Las Vegas, Nevada, was the biggest disappointment of all. It was under a buried mass of rocks, with a Pinto spearhead and the ends of human bones projecting from the bottom of the pile. We thought for sure we had the skeleton of old man Pinto himself. But when the stone pile was removed it was seen that nothing remained of the gentleman but crumbling bits.

Now comes the question of age. How long ago did our Pinto friends work and play, hunt, cook, eat and sleep in their village across the river from the lava cliffs? Everything we know about them indicates that they lived when our present deserts were anything but dry.

For instance, the subsoil under their village deposit shows many root-holes of good-sized trees, while only stunted desert brush struggles to live on the spot today; also the lower layer is blackened by leaf-mold. And a thin streak of clay in the middle of the deposit in the lower part of the site shows that the river backed up and covered part of the village while the people were living there.

Geologists say that this could have been at either one of two periods: the "Great Pluvial" at the end of the Ice Age, more than 10,000 years ago, when the present desert dry lakes were filled and overflowing; or about 3500 to 3000 years ago, during the "Little Pluvial" period, which brought back water, but not nearly as much, to the old lake and river beds.

It was thought at first that the Pintos flourished during the "Great Pluvial," more than 10,000 years ago, but it now looks as if it might have been the "Little Pluvial." We are not entirely sure. All we can say at present is that the Pinto people occupied the Stahl Site at least 3000 years ago.

Cave Explorations Forbidden . . .

Entering or exploring undeveloped caves or caverns within boundaries of the Carlsbad Caverns National Park in New Mexico is forbidden by a new special regulation just issued by the Secretary of the Interior. To explore any cave, official approval in writing must be obtained from the park superintendent.

A near-tragedy in March resulted in the ruling.

Bureau Makes Report on Lake Mead Silt Menace

Hoover Dam on the Colorado River, which impounds huge Lake Mead, has a useful life of at least 275 years despite the annual deposits of river-carried silt, and it should serve the Southwest for irrigation, power development and flood control much longer than that if indicated conservation measures are taken to keep the silt on the land where it belongs.

This is the conclusion announced by Interior Secretary Oscar L. Chapman after studying findings of a two-year investigation made for the Bureau of Reclamation by the U. S. Geological Survey with the aid of the Navy Department. The case history study of this nation's greatest reservoir proved, Chapman declared, "that many uninformed estimates of Lake Mead siltation are extravagant and groundless." There have been charges that construction of huge dams and reservoirs is an unjustified expense, because the silt collected behind the dams will fill the storage basins and render them useless in a relatively short time.

The silt menace, however, was not minimized by Chapman. Erosion from mountains, grazing lands, forests and farms is a problem in itself that "must be met with sound, vigorous watershed conservation measures if full economic benefits from water conservation dams are not to be diminished."

Preliminary results of the two-year investigations, Chapman said, show that silt has been deposited in Lake Mead at an annual rate of 105,000 acre-feet since water storage began in 1935. Actual measurements, after 15 years of operation, indicate deposits have been approximately what the Bureau of Reclamation calculated they would be before the dam was built. Lake Mead has a storage capacity of 31,142,000 acre-feet.

Replying to those who have claimed that it is wasteful to build big dams such as Hoover Dam because they will soon be ruined by silt, the interior secretary declared: "That is just simply not true."

At the present rate of siltation, studies show, it would take until the year 2225 for Lake Mead to fill up with silt. The compaction of sediment into a smaller area as tons of new silt pile upon it will extend this date to the year 2380—or 430 years from now—according to Geological Survey technicians.

But even that deadline, it is promised, will never come in the foreseeable future. Dams still to be built upstream from Lake Mead will stop its siltation. And in the meantime, according to Chapman, the dam's earnings from power will repay costs within the next 57 years.

Construction of upstream dams would trap much of the silt and permit comparatively clear water to flow into Lake Mead, while systematic efforts of stockmen and government agencies to conserve the upstream range lands—erosion of which is a major source of silt—should retard the loss of soil.

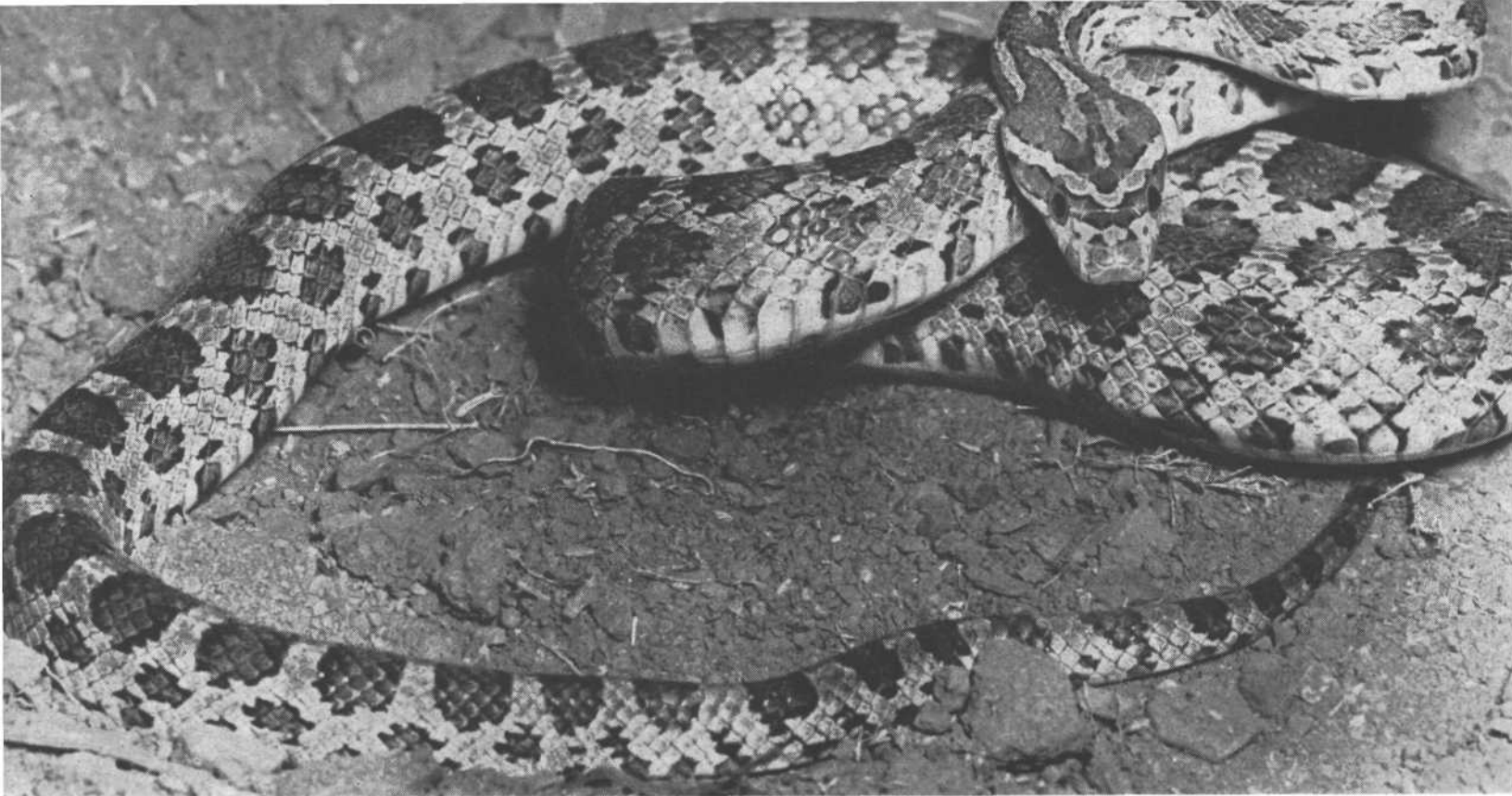
The encouraging findings at Hoover Dam are supported by silt studies being made elsewhere in the arid West.

Even without silt control, continued construction of dams and reservoirs in the West is economically feasible and is necessary, the bureau contends. But the silt problem is fully recognized and measured, and steps will be taken to combat it. These steps will have a two-fold aim: to keep every possible ton of soil on the land, and to minimize destructive effects of the silt which cannot be kept out of streams.

When Hoover Dam was designed, reclamation engineers knew that the muddy Colorado was one of the nation's worst silt-carrying rivers. They estimated the amount of silt that would be deposited annually, and allowed storage space to compensate for it. The joint survey just completed—first of its kind on a great reservoir—confirmed estimates of bureau engineers, and proved that ample space had been provided to retain the structure's usefulness long after construction costs had been repaid.

From the financial standpoint, the Bureau of Reclamation claims, the West's great dams are paying rich dividends, even counting the cost of silt control. The federal government, the bureau says, is in no danger of losing its investment because of sedimentation.

Reclamation Commissioner Michael W. Straus says bureau hydrologists have been keeping a close check on siltation in other federal reclamation reservoirs and their findings—like the results of the Lake Mead tests—show that "the useful life of the reservoirs will extend well beyond the payout period." Lake Mead, he says, will be useful for water storage and power production "for centuries to come."



They Prefer to Glide Away . . .

By GEORGE M. BRADT
Photograph by the author

ALTHOUGH I have handled half a hundred snakes of a dozen different species only once have I been bitten. Strangely enough it was by a three foot specimen of Emory's Rat Snake (*Elaphe laeta*), a non-poisonous, extremely useful destroyer of rats and mice. Of course, as is almost always the case in dealing with wild animals, I was entirely to blame. When cornered the Rat snakes will strike viciously by holding their bodies in S-shaped curves. Although I knew this fact, on one occasion I was so anxious to get a photograph of one of these richly colored snakes in its defensive pose that I chose to ignore it.

After much maneuvering I had gotten the snake focused on the ground glass, but as I moved my hand in front of the camera to adjust the lens opening the snake lunged at me and moved a few inches nearer the camera. This, of course, threw the focus off and I was forced to start all over again. I tried again and again with the same result. Finally my patience was exhausted and I decided to try a little stratagem. Just before I edged my left hand around the camera to adjust the opening I put my right one directly in front of the snake. When the snake struck this time it did not move towards the camera—but I moved away from it! The courageous snake had sunk its tiny, needle-sharp teeth into my bare hand.

My scheme had worked, notwithstanding my slight wound, for the next time I attempted to adjust the lens the apparently well-satisfied snake made no move. The resulting photograph is shown above. This episode not only added a new species to my collection of snake photographs, but it also brings up the question of snakes and their defensive behavior.

EMORY'S RAT SNAKE: Often called "chicken snakes," they can be found around hen houses, fields of grain, in fact almost anyplace where there is a rat population. They are the farmer's unappreciated ally in his war upon rodents. Yet they are ruthlessly slaughtered by misguided humans who think the only good snake is a dead one. If we would but leave most forms of our native wildlife to themselves that enviable "balance of nature" which man has, through his prodigal use of his natural resources, so notably upset might be restored.

The problem of defense—so vital in a predatory environment—has been solved by snakes in a variety of ways: some obvious, others ingenious, but all relatively successful. The principal one is escape. All snakes will resort to flight if allowed to do so. The occasional exception furnished by rattlers is explained by their slow movement which makes escape difficult. A second defensive measure is biting: even a grasshopper will bite, and most snakes will try to induce their captors to relinquish them by using their sharp teeth. While the wound in man will bleed profusely (a snake's saliva may possibly retard the blood's coagulation) it is not dangerous unless inflicted by a poisonous species. Even then, although the knowledge will not undo the damage, the bite may still be considered defensive. A third is the secretion of an offensive odor by the snake's anal scent glands to be found at the base of the tail in several groups of snakes: rat, king, water and garter snakes. While such a ruse will not deter a human captor it should effectively discourage another animal bent on devouring it.

Many a sluggish, slow-moving species will attempt to frighten an adversary. Rattlers are particularly adept at this form of defense as anyone who has come suddenly upon one of these awesome reptiles will attest. Even swifter forms will try to frighten an enemy if cornered. Bull snakes hiss loudly, hog-nosed snakes inflate their necks to increase their normal size. The almost universal animal habit of "freezing" in the presence of an enemy is resorted to often and effectively by even the brightly-colored species. A motionless snake is difficult to detect in its proper environment. Hiding is of course an immensely successful stratagem as snake hunters well know. A few species even try to protect their heads by hiding them under coils of their own bodies.

With her cabana well anchored and the roof nailed down, Catherine Venn, the city girl who came out to live alone on a 5-acre homestead, begins to get acquainted with her neighbors—the trees and shrubs and flowers which surround her little cabin.

Diary of a Jackrabbit Homesteader

By CATHERINE VENN

7 HERE WAS a static stillness to the early morning—a hush in the air and then came the soft pitter-patter of raindrops on the cabana roof. The moisture-laden clouds from the Pacific had stolen an early march over the mountain rim despite having been whipped back by the wind in a glorious, elemental battle of the previous day.

After the shower I became aware of a sweet, resinous odor that penetrated the fresh, damp air. Going out and sniffing about the shrubs I discovered that it came from the shiny green, oily leaves of one of the commonest bushes that abounded the region. (I didn't know it was the singular scent of wet creosote, or greasewood, so haunting and nostalgic to desert dwellers). It was the spindly, blackish branches of these graceful bushes that moved in wraith-like forms on windy, starlit nights.

Walking about this unfamiliar, green-coated company I searched for one among them I could call by name, but couldn't be sure of any of them. So I went on to the Little Wash where accents of color beckoned. The Little Wash is divided from the Big Wash beyond by a natural breastworks of rock and sand thrown up by rampaging flash floods of the past.

The raindrops had been like the touch of magic wands to every leaf, branch and blossom releasing a profusion of aromatic scents. Even the wetted sand and dampened rocks gave off a vapor of sun-baked earth crust.

Like a honey-bee traveling from flowering bush to flowering bush, I was drawn to the Big Wash. What had hitherto seemed a drab sameness of brush and cacti began to take on character and individuality with each step.

Awakening to the fascinating world of plant life about, I wished these mute shrubs could talk and tell me their names and all about themselves, and their purpose in the desert domain we shared.



Greasewood or Creosote bush are the common names, but scientifically it is Larrea Divaricata. With the possible exception of Burroweed, Larrea is the most widespread and common shrub of the Southwest desert. Following a rain storm the air is scented with its resinous perfume. Photo by M. and M. Carothers.

Suddenly, before I heard or saw him, a man appeared from around the wide-spread, thickly leafed shrub in my path. He had a lithe, quick step, and was so absorbed in whatever he was pacing off that he nearly ran head-long into me. His countenance bespoke his roots in the desert as firmly as those rooted by nature.

I gulped a surprised, "Hello!" And he gulped back an equally surprised, "Hello."

"I didn't expect to find a woman around this Jojoba bush," he exclaimed. "I'm looking for a corner post."

"Jojoba!" I repeated, eagerly seizing upon the name of the bush.

"Its common name is Goat-nut," he replied, in the sure tone of one referring to an old friend. He fingered the gray-green, leathery leaves. "The oily nuts from this bush were used by the Indians and Mexicans for food."

We engaged in conversation, and he told me he was from a neighboring village and was trying to help a friend locate his claim.

Then I asked him the name of the round bushes sprouting the long, light red flowers.

"They are Chuparosa, the humming bird bush. The blossoms are as sweet as nectar and easily probed by the tenuous beak of *la chuparosa*. The Papago Indians eat the blossoms."

"And that large grayish bush covered with blue blossoms. Is that the purple sage?" I ventured, anxious to take advantage of this neighbor's knowledge of desert botany.

"No, that's Desert Lavender," came the quick, authoritative answer. "Desert Lavender is one of the best honey-bee plants." He strode over to the fragrant bush, picked and crushed a leaf and handed it to me. "What do you smell?" he asked.

"It has a faint whiff of turpentine."

"Precisely. The desert shower has brought it out."

I asked the name of the bushes that gave off the clean-smelling, resinous odor and learned they were Creosote, which my informant preferred to call Larrea. The mention of Larrea turned him from his course and he led the way up the embankment where we could view the expanse of the Creosote. Had I observed the pattern of uniformity of this bush? Had I observed that Larrea was consistently flanked by the low, ash-white bushes, called Burroweed? Had I been aware of their conspicuous contrast which made them distinguishable for great distances? Subconsciously, perhaps, as I had likened them to a green-coated company.

"Larrea," he explained, "is found in both the Lower and Upper zones of Sonoran plant life. In driving up the mountain slope, you will notice a marked change in the plant life. I'll jot down the names for you of some of the graceful and picturesque signposts to look for in the zone above the Creosote belt." He handed me the list: Ocotillo, Nolina, Agave, Yucca, Juniper, Ephedra . . .

"Are the plants as pretty and interesting as their names?" I asked.

"No names could describe their beauty, and most of them were as useful to the Indians as they are beautiful. And farther up you should get acquainted with the Pinyon and the Ribbonwood, the Rhus ovata and the Wild Apricot."

"I do want to get acquainted with all of them," I agreed, and said to myself, Rock Hill, for a grab-bag homestead, you're not so badly located.

He turned my attention back to the Larrea. "Soon," he continued, "the Larrea will be covered with a dainty, yellow flower that later turns into a rather spectacular crop of little white fuzzy balls, called seed-balls. The Mexicans found many valuable medicinal uses for Larrea and the Indians employed the resin in mending their pottery and in waterproofing their baskets."

Pointing to the ashen-colored bushes about the Larrea, he said, "These are erroneously called Burroweed. But it is not an obnoxious plant and donkeys and sheep relish it. In fact, legend has it that Burroweed got its name because a burro could eat three of them for a meal. But Creosote tastes so bad the animals don't bother it. Nature saw to that, because the Creosote, or Larrea, has no thorns, and most all the desert plants depend on thorns for protection."

Sensing my interest he volunteered to conduct me on a quick round of my jackrabbit homestead as he identified and listed its plant life as methodically as a person taking a fiscal inventory.

"These little folks are lovely friends and neighbors when you get to know them" he commented. And by now I was as eager to know them as if they were real flesh and blood neighbors.

My instructor directed me to the large bush that was wearing a coral-pink turban. The turban was a festoon of Mistletoe and I was surprised to learn that Mistletoe was to be found on the desert. The bush was the nearest resemblance to a tree on Rock Hill's five acres.

"It's armed with regular catsclaws," I observed.

"Catsclaw is its name," he said. "And those claws have probably been a haven of protection for many a little rabbit."

Close by in its full-spread skirts, stood the only Jojoba on Rock Hill. About it were Desert Lavender and Chuparosa bushes, which already I was proud to call by name.

My neighbor was observing the many buds protruding

above the numerous dome-shaped, brittle stemmed bushes, and remarked, "Your Rock Hill has so much Encelia, or Brittle bush, that your hillock will be ablaze with gold when these buds come into their bright yellow bloom."

He introduced me to my large family of spiny Opuntias and their relatives, and I didn't need to be cautioned about becoming too intimate with them. It took no imagination to see how the antlerish Staghorns and the fuzzy-headed Teddy-bear cacti came by their names. Even little Beaver-tail. How much easier it was to remember Darning Needle Cactus than Opuntia Ramosissima, but my teacher wrote them both down. However, I did want to call my beautiful Barrel Cactus by its formal name, Bisnaga, perhaps because it was wearing a crown of chartreuse buds.

When the list was finished, it contained such familiar names as Sage, Buckwheat and Dyeweed, stacked up with such intriguing strangers as Phacelia and Hymenoclea. But whatever the plant, always, Rock Hill's Indian predecessors had employed it to some vital use; roots of one plant, fruit of another, the color in the blossoms of some, the excretions from the leaves of others. Seeds, stems, stalks, nuts or nectar, all served some purpose. I was astounded at the variety of food, the field of medicinal uses, and the range of raw materials.

"I'll take off my hat to the Indians, the white man would starve here," I remarked when he was through. This was more than a botany lesson, it was a revelation.

As we approached the cabana, the desert varnish on the freshly washed flat rocks glistened in the sun's rays like so many mirrors placed about the little rock hill.

At my door, my teacher stopped short and exclaimed, "An Indigo bush! Right at your front door!" But his face took on a pained expression as he examined the hacked center of this slender-stemmed, almost barren bush.

"It was done by a well meaning city friend, who thought it was too close to my door," I hastened to explain. "But my instinct was to save it, and I made him stop with his axe in mid-air."

"Your instinct was right. The Indigo is becoming increasingly rare in this area all the time. And once you have seen its deep indigo-blue blossom you will never forget it, nor its unusually sweet fragrance."

My field trip was over. My botany instructor drank from his canteen, and said, "The next time I have occasion to come this way, I shall expect you to know all your little desert neighbors by their first names."

"I'll try," I told him. And he took his leave, disappearing into the wash as quietly as he had appeared.

It was a difficult assignment linking the right names to the right faces and bodies. And in the days that followed I caught myself interrogating the shrubs and impatiently barking, as if they should answer to my roll call, What's your name? Your first name? Your nickname, any name? You must have a name? But it wasn't long until I could call them all by name. And I took more genuine pride and pleasure in introducing these desert neighbors to the folks who came to Rock Hill than if they were real flesh and blood people.

The wind had come up, blowing sharp, rebellious gusts that reminded me of an angry farmer's wife flapping her apron to scare off a flock of white chickens invading her garden. I took refuge from its course in the niche of the big stone at the base of my little rock hill and reflected on something I had not consciously realized before, that each day the desert was revealing to me more of itself in its own time and in its own mysterious way.

(Catherine Venn's story will be continued next month)

The cowman saw the Opata Indian remove a knotted rope from a catsclaw bush near the entrance of the shaft.



Silver Mine of the Old Opata Indians

By JOHN D. MITCHELL
Illustration by Grim Natwick

IT HAD long been rumored among the Indians and Hispano-Americans that the Jesuits discovered and for a time worked a rich silver vein in the western foothills of the rugged San Cayetano Mountain about three miles southeast of the ancient ruins of the San Cayetano de Tumacacori mission, near Tubac, Santa Cruz county, Arizona.

The rich ore was said to have been mined and carried to the adobe furnace on the backs of Pima, Papago and Opata neophytes. All mining ceased in 1772, when the mission was suddenly raided by a band of Apache warriors and for many years thereafter the old building lay in ruins.

The mine lay idle for 142 years, or until 1914, when it was discovered and worked on a small scale by an old Opata Indian *gambucino*, who lived on a small plot of ground on the Santa Cruz river about half way between the ancient mission and Tubac. The old man made frequent trips to the mine and sold the ore to a Chinese merchant at Tubac.

In 1915, I saw five sacks of the ore in the back room of the little adobe store and had the pleasure of picking up a few pounds of the highgrade and letting it trickle through my fingers back into the sack.

In 1917 a cowman whose family still resides near Tubac, was riding

Probably the richest ore has been taken from this ancient silver mine, but there was still enough high-grade to supply the larder of the old Indians who were working it — until their death a few years ago. Here is the story of a "lost mine" of which the writer of this story has personal knowledge.

after cattle in the western foothills of the San Cayetano Mountain and from a distance saw the old Opata emerge from a small opening at the base of a little grass-covered hill. The hole was partly obscured by a small catsclaw bush that had grown up in the soft earth of the mine dump. The old Indian carried a small sack which seemed to be very heavy.

Removing a short knotted rope which was tied around the trunk of the catsclaw, he carried it about half way up the hill and carefully concealed it in a clump of bushes. This done he looked in the direction of the old mission ruins, made the sign of the cross and then climbed down into a deep canyon, many of which gash the

Hard Rock Shorty

of Death Valley



"Ever have any water in that big dry lake down the road?"

The question came from one of the dudes who was lounging in the shade of the porch at Inferno store while the mechanic in the service station was patching a tire. Hard Rock Shorty was standing in the doorway with his old corncob pipe in its usual place.

"Shore!" he exclaimed. "I've seen that lake full o' water an' covered with ducks. Greatest huntin' place in the world when we have enough water to fill that lake. But it don't happen very often.

"Biggest storm we ever had was in '17. Water stayed in that lake nigh onto a year an' a half. Pisgah Bill usta go down there a couple o' times a week to shoot a mess o' ducks. Then the water began to go down and it was so muddy around the shore Bill couldn't get close to the birds. Finally he built a boat outta some old lumber over at the mine. He dolled the boat up with tules and he'd float right into a flock o' them birds and then cut loose with his ol' double-barrel. We had duck meat all that winter.

"Then one time in February Bill didn't come back for two days. There wuz a big sandstorm and we wuz afraid Bill was lost so we harnessed up the buckboard and went down lookin' fer him.

"Wind was blowin' so hard and it was so dry it turned the muddy water in that lake into dust in two hours. When we got there Bill was sittin' out there in the boat in a cloud o' dust. He'd broke both oars trying to row through the sand dune that had piled up around 'im."

western foothills of the San Cayetano, and made his way slowly past La Cienega, the mission ruins, and thence to his little home beneath the cottonwoods on the western bank of the Santa Cruz.

About six months after the Oyata was seen to leave the mine, I spent a month in and around the ancient town of Tubac and the ruins of Tumacacori. Securing board and room at the home of the cowman, I spent some time prospecting the area. While I was here I heard the story of the lost mine.

The working was an inclined shaft, sunk on a grey quartz vein that followed a diabase dike running in a northeasterly and southwesterly direction across the base of a small round hill. On a clear day when the sun hangs low over the ragged Tascosa and Tumacacori mountains, a traveler may see the small dark opening from the Tucson-Nogales highway.

An examination convinced me that most of the rich ore on the surface had been gouged out by ancient miners. Small fragments of lowgrade ore broken from the grey quartz ledge assayed only 600 ounces silver per ton. About 30 feet down the inclined shaft was a drift to the northeast exposing a small streak of highgrade silver ore assaying 6000 ounces per ton.

Near the entrance to the drift was a small wooden cross and on the floor about half way in was a short length of railroad iron evidently used by the old Oyata in freeing the rich silver glance from the grey quartz with which it was associated. The waste and lowgrade ore was dropped down the shaft into the water. The drift showed rich ore all the way along both in the roof and the floor. There were a few small stopes from which the old Oyata evidently had gouged out the rich ore.

A map of the district showed that the old mine was located on a Spanish land grant which at that time was in costly litigation, making it impossible to lease. I decided to visit the home of the old gambucino and if possible learn more about the mine.

The old miner lived with another ancient Oyata whose forefathers were neophytes at Tumacacori and Guevavi. It was springtime in the verdant valley of the Santa Cruz and while the snow-cap still lingered around the summit of old Baldy high up in the Santa Rita range, the peach trees were in full bloom in the valley below.

Long-haired Calistro was much older than Juan the miner. It is said he was a soldier under the Mexican patriot Benito Juarez and was in the firing squad that executed Maximilian, the puppet Emperor.

I found the two old Indians engaged in planting a little garden along the bank of the river. As we stood talking, an old woman clad in a bright new gingham dress came to the door of the little brush house and called out that dinner was ready. In the house,

they bade me be seated. Calistro introduced the old lady as *mi esposa* (my wife). When old Juan arrived he also introduced the lady as *mi esposa*. Seeing that I was somewhat puzzled, Calistro explained that they were *Companieros* (partners) and went on to explain that the old lady had been with them for many years, cooking their meals, washing their clothes, keeping their pallets dusted and soft and their poor house spick and span.

As the three of us sat on a bench and talked, the old woman was tending an olla full of frioles and a sputtering coffee pot, and patting out delicious corn tortillas which she baked on the small camp fire.

After one of the best meals that I had ever eaten, we moved to the shade of the cottonwoods and talked while the old *companieros* smoked innumerable cigarettes. We conversed about many things, but not once did the Indians mention their rich silver mine. After they had given me their house and all that it contained and shown me such wonderful hospitality I did not have the heart to ask them about the mine, for I knew they preferred to regard its location as a secret.

While eating dinner in the house I could not help but observe that their larder was plentifully supplied with frioles, potatoes, onions, dried meat, coffee, sugar, long strings of bright red chili peppers and many other things. They had no visible means of support other than the little garden and I felt sure that it was from the rich silver mine that they drew their wealth. Probably the mine has been worked by the family for generations, and the secret handed down by word of mouth from father to son.

Many years have passed since my visit to the modest home of the old *compadres*. More recently I learned that both of them had died, and as there were no children to carry on the mining the entrance to the old shaft probably has become overgrown with desert shrubbery.

The two graves of the old miners are marked with stone cairns and wooden crosses. It has long been the custom among certain Indians to cast a stone upon the grave of a former friend when passing by, and these two cairns have now grown to considerable size.

As far as I know the mine is still a part of the old Spanish land grant, and the owner controls the mineral rights. However, some worthy miner or prospector, looking for a small vein of rich ore, may now be able to make a deal with the owner, now that the litigation is cleared up. The mine will never make a fortune — but it will keep his larder well supplied.

MINES AND MINING . . .

Albuquerque, New Mexico . . .

New Mexico could become an important iron and steel producing state according to the opinion of Dr. Vincent C. Kelley, professor of geology at the university here. The state has 142 million long tons of iron ore in reserve, he estimated. Fluxes and ferro-alloy metals such as manganese, molybdenum, vanadium and tungsten are available within economical hauling distances. The main drawback is lack of water.—*Gallup Independent*.

Parker, Arizona . . .

Closed since early in World War II, a group of gold and copper claims five miles northeast of here have been leased to the Associated Mining Company headed by A. C. Burger of St. Louis. Men and equipment are being moved to the property. Owners are Clara Botzum, H. M. and E. S. Osborne.—*Yuma Sun*.

Tombstone, Arizona . . .

Working the old Prompter-Oregon mine which yielded over a million dollars worth of silver and manganese during its peak operation between 1917 and 1922, Mayor John P. Giacoma with a crew of five men working at the 300 foot level are taking out ore carrying 18 to 40 ounces of silver to the ton. "I have a hunch there is a quarter of a million in silver in that hole," said Giacoma. — *Tombstone Epitaph*.

Banning, California . . .

San Jacinto Mining company with a lease on 700 acres of tungsten deposits in the foothills two miles south of Banning airport, expects to be in full production this winter. Operating a 25-ton mill they are able to ship concentrates of 75 percent scheelite. Lessors are Ernest J. Zoeller, engineer, Bill Schrader and Marvin W. Stewart of Long Beach.—*Banning Record*.

Washington, D.C. . . .

Under Public Law 582, signed by the president June 29, holders of mining claims will have until October 1 this year to complete their assessment work. Under previous enactments the time limit was July 1 for assessment work covering the 1949-1950 fiscal year. In authorizing the extension the House and Senate committees warned the mining industry that it could expect no further suspension or extensions of time for doing the required \$100 worth of labor and improvements annually.

Kingman, Arizona . . .

Howard Dungan reports that he has sold the titanium claims of the Bi-Metals Group near here to a large eastern chemical manufacturer. Dungan stated that the ore to be mined is ilmenite from which titanium is extracted. In the past it was used mainly in the manufacture of paint, smoke screen and sky-writing gases, but it is now being used also as a metal alloy. The Bi-Metal mine is said to be the largest accessible titanium ore body in North America.—*The Mining Record*.

Beatty, Nevada . . .

O. E. Walling announced that during August a 100-ton "impact" mill was to be installed at the Quinn mill property south of Beatty. The new mill, manufactured at Santa Ana, California, is said to be unusually efficient, showing a free gold recovery of 73 percent, with an additional 18 percent through concentration. Associated with Walling are Bob Borneman, Wayne Hawkins, Bob Fisher, Leo Johnson, Glen Fisher and Ted Siebert.—*Beatty Bulletin*.

Goldfield, Nevada . . .

When Fred Kempa, 88-year-old miner, failed to return to his home in Goldfield, Sheriff Henry Carlson organized a search for the aged man. Boy Scouts who joined in the search were credited with finding him, ill and weak from lack of food, near the entrance to a mine tunnel where he had been working, 4½ miles east of Goldfield. He told his rescuers that his rheumatism had prevented him from returning to town. He had been able to crawl into the tunnel, however, to escape a downpour of rain. Taken to the hospital he quickly responded to care and nourishment.—*Goldfield News*.

Tonopah, Nevada . . .

Will and Louis Cirac have been assembling equipment at the Grey Eagle silver-lead mine on Indian Creek in the Bullion mining district preparatory to active mining operations. The property was discovered in the '70s and was worked with a high production record until 1905. An estimated 10,000 tons of dump material are to be milled at the Tenabo Mining and Milling Company 12 miles away. Dump samples are said to have assayed \$16 to \$18 a ton. Concentrates from the mill are to be shipped to a Utah smelter.—*Tonopah Times-Bonanza*.

Ajo, Arizona . . .

First operation of Phelps Dodge Corporation's new \$7,000,000 smelter was scheduled for this month. Actually the first tests were made in June. Part of the new plant was moved from Clarksdale after the company shut down its United Verde operations there early this year. The smelter is part of an \$11,000,000 expansion program instituted by Phelps Dodge early last year.—*Tucson Daily Citizen*.

Goldfield, Nevada . . .

Goldfield Consolidated Mines in its annual report to its stockholders, stated: "The company's properties at Goldfield remained inactive last year, and with the government's continued restriction on marketing of gold there remains little incentive to do development work."—*Goldfield News*.

Denver, Colorado . . .

During the first six months of 1950 gold receipts at the Denver mint amounted to 331,796 ounces worth \$11,612,851, and silver receipts were 95,527 ounces valued at \$85,077. This incoming metal is nearly 50 percent higher than during the same period in 1949 according to Moses E. Smith, superintendent of the mint. —*The Mining Record*.

Tonopah, Nevada . . .

Demand for turquoise is increasing and the known supply is decreasing, according to Ralph Swafford, local turquoise dealer. Few new deposits have been found in recent years, although some stone of excellent quality is still being shipped from Nevada. Turquoise imported from Persia is bringing from \$15 to \$500 a pound.—*Battle Mountain Scout*.

Rawhide, California . . .

Selected samples from the Red Granite mine located midway between Schurz and Rawhide recently assayed \$6112 a ton in gold, according to the operators, J. M. Hicks, D. H. Hicks and George E. Miller. Working on an 8-inch vein along a distance of 450 feet, run-of-the-ore samples showed values from \$50 to \$735 a ton.—*Inyo Register*.

Henderson, Nevada . . .

The filing of an application by the Western Electric Chemical company for an additional allocation of power from Hoover dam revealed that the company is planning to spend \$5,000,000 for the expansion of its operations at the BMI plant here. The company now has 150 men at work in the big war-time plant, and it is reported this number will be increased to 500. The Western Electric produces strategic war materials.—*Pioche Record*.

LETTERS...

Asbestos in Baja California . . . Lancaster, California

Desert:

Your story in the August issue of *Desert Magazine*, "More Profitable Than Gold," recalled an experience in the early '30s when I was working as a cook on the tuna fishing clippers out of San Diego.

Having time on our hands one afternoon while we were at anchor off an island along the Baja California shore the radio operator and I went ashore in the ship's small skiff. While he was looking for wild dates I walked inland and came across a deposit of what I thought was asbestos.

I knocked off some specimens about a foot long and tied them up in my shirt. A month later in San Diego I took them to an assayer. He pronounced them chrysotile, long fiber, but did not give me much encouragement as to mining them in Mexican territory.

The outcropping was about 20 feet high and 30 feet wide, and seemed to have quite an over-burden as it was in a sloping hill. The deposit is easily accessible by water and my guess would be that it could be handled by open-pit mining provided there is enough of the material there to make it worth while.

If there are any parties interested in this deposit they can get in touch with me at 751 Sierra Highway, Lancaster, California.

HARRY VAN SCOIK

In Defense of the Parks . . .

Webster Groves, Missouri

Desert:

In the July 22 issue of *The Saturday Evening Post*, Bernard DeVoto has an article entitled "Shall We Let Them Ruin Our National Parks?" The answer, as far as I am concerned, is definitely "NO" and I feel confident that all nature lovers will subscribe to it most heartily.

Mr. DeVoto refers to the Army Engineers and the Reclamation Service, and particularly to their plans for building dams in certain National Parks and Monuments. While the ones he mentions are not all in the Southwest, nevertheless, if they get by with it in one place, no area will be safe. What we need in this muddled, war-torn world, is more beauty—not less. Without beauty, we lose the spiritual values in life and, in our materialistic, competitive scramble for dollars today, that is precisely what is happening.

Let us keep these places of beauty

and grandeur as God made them, for the delight and contemplation of posterity, and prevent anyone from defacing or destroying them on any pretext whatsoever. I have visited most of the parks and monuments in the West and Southwest that are easily accessible, and several that are not, including Navajo and Rainbow Bridge, and I hope to go back again.

HAROLD T. SMUTZ

Lots o' Thin Dimes . . .

Ol' Fort Oliver
Thousand Palms, California

Desert:

Your *Desert Magazine* readers seem to like my *Desert Rat Scrapbook* pretty well. After you told 'em about my *Lost Treasure* edition in your June issue I got a flood o' dimes and 50-cent pieces from all over the United States, wrapped in cellophane, cardboard with holes cut in it, scotch tape and stuff. I'm still gettin' 'em.

If half the people who sent in a dime for those lost gold stories go out lookin' for the gold the desert'll be covered with amateur prospectors next winter when the weather cools off.

HARRY OLIVER

On the Subject of Cats . . .

La Grange, California

Desert:

George Bradt's story about the ring-tail cats in your June issue recalled some experiences I had with these animals. In 1933 while prospecting in the Muggins mountains east of Dome, Arizona, there were so many of them in the vicinity they almost ate me out of house and home.

But the strangest specimen I have seen was in Shasta county. The animal came in and played with the house cats. It had a ringtail and pointed nose and sharp ears—but its body was like that of a common house cat. I am sure it was a mixed breed. It stayed around with the cats, but would not permit us to come close enough to touch it.

FRANK BROWN

THE *Desert* MAGAZINE
CLOSE-UPS

For three years Weldon Heald tried to combine the profession of writing with the business of operating an Arizona ranch — and when he realized that the combined jobs were making a slave out of him he solved the problem by selling the ranch.

Heald's Flying H ranch was down in the Huachuca country of southern

Arizona, where Cochise and his Apache braves once hid from the American soldiers who were trying to capture them. During three years residence in that picturesque region, Weldon and his wife Phyllis became so fond of the Huachucas that when they sold the ranch a few months ago they retained a homesite there — Farview they call it. Their postoffice is Hereford, Arizona.

Before they went to Arizona in January, 1947, the Healds had a lovely home near Altadena, California. But they were too young and too energetic to be happy just putting around their flower gardens. So they bought the 8000-acre Flying H ranch and went to Arizona, burning their California bridges behind them. They went in for ranching in a big way—Hereford and Angus cattle, 10,000 chickens, 2000 ducks, turkeys, pigs, rabbits and even frogs.

But that was too many cows and chickens and ducks. It was interfering with Weldon's writing. Now that the ranch has been sold, Weldon is putting in full time again at his typewriter. Despite the ranch activities, however, he found time during the last three years to contribute to three volumes of the American Mountain Series, including *The Inverted Mountains*, has sold 42 illustrated feature stories and 125 photographs to magazines and newspapers. His next book, due to be published before the end of the year, is *How to Retire to the Southwest*. In the meantime he is under contract to write 12 Scenic books of the far western states.

This, briefly is the background of the man who wrote the story of Frank and Peggy Secret for this issue of *Desert Magazine*. It is a story which will interest many city dwellers who wonder if they really have to spend the remainder of their lives amid the bad air and the distracting noises of the big city.

Weldon and Phyllis Heald believe their Huachuca country has the finest climate in the world, but unfortunately — or fortunately — there is no chamber of commerce in that region to publicize its virtues.

Each year there is held in Santa Ana, California, a Poetry Convention sponsored by the local chapter of the Chaparral Club and two local literary organizations, the Pierian and the Pegasus. Winner of the first prize in the Western section in 1949 was Mary E. Perdew, who has contributed to *Desert's* poetry page for many years. *While Campfires Glow* was the winning poem, and through the courtesy of Mrs. Perdew it is published on the poetry page of this issue of *Desert Magazine*.

HERE AND THERE ... on the Desert

ARIZONA

Prayers to the Rain Gods ...

PEACH SPRINGS—Supplications to tribal gods are more effective in bringing rain than are new fangled rain-making procedures, Binninie firmly believes.

Binninie is an aged Navajo medicine man. Eight years ago he visited the four sacred mountains of the Navajo to pray for rain. After his supplications the rains came, ending a great drouth on the reservation.

Now 80 years of age, Binninie this summer again visited the four sacred mountains. He began his supplications July 5. He refuses to believe that subsequent rains were the result of silver iodide or ice crystals, despite the fact the tribal council appropriated \$10,000 for artificial rain-making efforts. More rain was needed, so Binninie continued his visits to all four mountains.

He went first to the sacred mountains of the west—the San Francisco Peaks near Flagstaff. Next was the La Plata Range in northwestern New Mexico, Mt. Taylor in New Mexico and Plado Peak near Santa Fe. From each he brought back holy earth, holy water and holy pollen over which to make his medicine from these sacred land marks. Prayers and sand paintings complete his ritual.—*Gallup Independent*.

Beware of Land Sharks ...

YUMA—The day of the land shark apparently isn't past. These fast-talking, smooth-writing super salesmen are still selling desert land worthless for agricultural purposes to unsuspecting would-be irrigation farmers, according to E. A. Moritz, Region 3 director for the Bureau of Reclamation at Boulder City, Nevada.

There has been some speculation on the Wellton-Mohawk division of the Gila project in southwestern Arizona, now under construction, Moritz said. Efforts are being made to keep the speculation at a minimum by properly informing prospective buyers. Most important is to determine whether land being considered is within boundaries of an irrigation project.—*Yuma Daily Sun*.

Huachuca Museum is Launched ...

BISBEE — Because the Huachuca Mountains are the habitat of many rare birds, animals and reptiles — many of them unclassified — residents of what is known as the Huachuca strip have formed an association to establish a Cochise County Museum to house specimens and relics of the region.

Weldon F. Heald, writer and ranch operator, is treasurer of the organization, Mrs. F. C. Bledsoe is president, Mrs. Heald is secretary. Ft. Huachuca Enterprises, Inc., has given the association the post library building and Fred Olsen has been named curator. Specimens are already arriving. Many naturalists have been working in the area during the past summer, and it is hoped to preserve one good specimen of each rare species of wildlife found in the county.—*Tucson Daily Citizen*.

Tribesmen File Huge Claim ...

WASHINGTON — Claims against the government for asserted loss of nearly half of its ancient homeland have been filed by the Navajo tribe with the Indian claims commission. The petition is based on the 1848 treaty of Guadalupe Hidalgo with Mexico and on a Navajo treaty signed by President Millard Fillmore in 1850. The petition also asks that a later treaty, signed in 1868, be nullified or revised because it was obtained from tribal leaders "under threat, duress and the presence of force." This treaty

set up the Navajo reservation somewhat along its present lines. It gives the Indians "a meager and barren portion of their homeland."

The Navajo reservation today has 25,000 square miles of land, most of it desert. The rightful Navajo homeland, occupied by the tribe for centuries before 1846, embraced 45,000 square miles in Arizona, New Mexico and Colorado, the petition asserts. Rights of the Indians to this domain were fully protected by the treaty of Guadalupe Hidalgo, the tribe contends. The claim also cites other treaty violations, including failure to provide educational facilities.—*Tucson Daily Citizen*.

Gophers Aid Archeologists ...

POINT OF PINES — Bits of charred wood, broken pottery and grains of corn brought to the surface by gophers have set archeologists on the trail of an ancient Arizona pueblo. Dr. Emil Haurly, director of the University of Arizona field school here, and students this summer uncovered parts of a city that is believed once to have housed up to 10,000 persons.

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BACK ISSUES: of Desert Magazines by the year or single issues. Edna Malott, 5023 Meridian St., Los Angeles 42, Calif.

DESERT MAGAZINE office has just obtained a few copies of the first issue published in November, 1937. These are in good condition and will be sold at the price we paid for them, \$5.00 each. This is a rare collector's item. Desert Magazine, Palm Desert, California.

MISCELLANEOUS

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KODACHROME SLIDES on approval. Glacier National Park; Banff, Jasper and Lake Louise, Canada; Western National Parks also available. Douglas Whiteside, Yosemite, Calif.

PANNING GOLD — Another hobby for Rock Hounds and Desert Roamers. A new booklet, "What the Beginner Needs to Know," 36 pages of instructions; also catalogue of mining books and prospectors supplies, maps of where to go and blueprints of hand machines you can build. Mailed postpaid 25c, coin or stamps. Old Prospector, Box 21 Dutch Flat, California.

SITUATION WANTED: Couple, 42 and 44, refined, well educated and ambitious with good personalities and background desire position as Motel managers in Desert area. No experience but are about to complete Motel Management schooling. A-1 References. W. Schwarz, 2081 Huntington Dr., So. Pasadena, Calif.

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Dryest Year on Record . . .

PALM SPRINGS—This desert resort area had its dryest season of record during the 1949-50 rainfall season. Records are kept from July 1 to June 30 of the next year. In that 12-month period only .96 of an inch of rain was officially measured in Palm Springs. Lowest previous year on record was the 1946-47 season when 2.76 inches fell.—*Palm Springs News*.

Continued excavation is expected to uncover burned prehistoric rooms from which the bits of charred wood came. What archeologists want to know is why this ancient eastern Arizona community and others over the Southwest were abandoned. — *Los Angeles Times*.

CALIFORNIA

Clouds Seeded, Rain Halts Fire . . .

SAN GORGONIO PASS—A man in a converted P-38 photo plane took to the air, sprayed cloud formations over San Gorgonio peak and Mt. San Jacinto with dry ice, and heavy rains fell putting out a brush and timber fire which had raged over 12,000 acres in the San Gorgonio area for a two-week period. The rain did what 250 weary fire-fighting men had been unable to accomplish.

Bob Symons piloted the California Electric Power company plane. The firm has for the past two years experimented with artificial rain-making in the region above Owens Valley where much of its power is generated at hydroelectric plants.

U. S. and state forestry officials did not confirm or deny that the cloud seeding caused the heavy rain which halted the destructive fire. James K. Mace, regional deputy for the State Forestry division, said: "I'm not an engineer and therefore not qualified to comment on cloud seeding. All I know is that it rained after the clouds were seeded." Rain in the fire area was so heavy that it washed out the main road fire fighters were using to move in their equipment. — *Barstow Printer-Review*.

Flood Hazard Follows Fires . . .

RIVERSIDE — Two forest fires which burned more than 14,000 acres of watershed in Riverside County have created "very dangerous" flood hazards by destroying trees, brush and undergrowth which normally hold rain waters on the mountainsides for seepage into the ground. A heavy rain in the Mt. San Gorgonio area, County Flood Control Engineer Max Bookman warned, could wash out water lines, a main line of the Southern Pacific and other utilities.—*Los Angeles Times*.

Pheasants Reared for Hunters . . .

BISHOP—Four Hundred Mongolian pheasant chicks are being reared at the Rainbow club pens here for release this fall prior to opening of the pheasant hunting season. Approximately 50 percent are cocks. This will raise the total scheduled to be released in Inyo and Mono counties to 2700.—*Inyo Independent*.

Refuge for Wild Burros . . .

BARSTOW—A proposal has been made that the Calico Mountains be declared a National Monument and refuge for wild burros of the Lake Mead and Death Valley areas. An article by Harold and Lucile Weight in the *Calico Print* suggests that the controversy over whether or not burros drive mountain sheep off a range might be settled by providing a refuge for the burros. In Arizona there are already two areas for mountain sheep, the Kofa and Cabeza Prieta game refuges. Mountain sheep are of course protected in the mountains around Death Valley, and a few range the hills in Joshua Tree National Monument and the rocky lower reaches of the Santa Rosa and San Jacinto Mountains in California.—*Barstow Printer-Review*.

Wants to Join Desert County . . .

TWENTYNINE PALMS—A committee representing citizens living in Twentynine Palms and vicinity—which is in San Bernardino County—wants to secede from San Bernardino County and become a part of Riverside County. The committee asked Riverside supervisors to accept a strip of land 12 miles wide extending 150 miles east-to-west along the present Riverside County northern boundary. The area includes Twentynine Palms, Joshua Tree, Yucca Valley, Morongo Valley and the desert eastward to the Colorado River.

But Riverside County's legal counsel has reported the move can't be made legally, and the Twentynine Palms chamber of commerce declared the committee was acting without the chamber's knowledge or approval, so nothing has come of the proposal.—*Banning Record*.

Marker Honors Desert Pioneers . . .

INDIAN WELLS—Pioneers of Indian Wells Valley—the missionaries, explorers and trail-blazers, freighters and stagecoach drivers, miners and prospectors, emigrants to the Pacific coast and the California gold fields—were honored at recent ceremonies when a commemorative state registered marker was dedicated at Indian Wells on Highway 6. This was the fifth of nine markers to be placed along the Manly-Jayhawker trail which 100 years ago led through Death Valley to

the coast near Los Angeles. The Manly and Jayhawker groups drank of the waters of Indian Wells after a five-day waterless journey out of Death Valley over the Argus and Slate ranges. The wells are there today, 200 yards from the marker. The official landmark is sponsored by the Indian Wells Lions club.—*Randsburg Times-Herald*.

NEVADA

Bing Crosby Honorary Indian . . .

OWYEE—Bing Crosby, singer, has become the first white man "brother" to be taken into the one-time war-like Shoshone-Paiute Indian tribe. He was taken into the tribe at a ceremony on the reservation near here. According to tribal custom, Bing's name was changed to Sond-Hoo-Vie-a-Gund—man of many songs.

The ceremony was without Hollywood fanfare. Crosby has extensive ranch holdings near here and has been a friendly neighbor of the tribesmen for several years. Indian Braves went into the rugged Nevada wilds the day before the ceremony to gather eagle feathers for an ornate war bonnet presented to Bing. He was given the "eternal right" to hunt and fish the year around on the reservation. Bing sang "Home on the Range" and "Blue of the Night."—*United Press*.

Huge New Water Project . . .

RENO—A 30-million-dollar master plan designed to harness the Truckee and Carson Rivers for irrigation, power development and flood control has been formulated by a committee of western Nevada water users. The result of years of study, the project calls for construction of three major reservoirs. One would be an 18-million-dollar dam on Prosser Creek, a tributary of the Truckee River, to be built by the Army Engineers. Second would be a 10-million-dollar reservoir on the Little Truckee River, to be constructed by the Bureau of Reclamation. Third reservoir would be at Young's Crossing on the Carson River. The plan would also utilize Lake Tahoe water by establishment of a permanent pumping plant at the lake outlet.

Power phase of the up-stream development program envisions two on the Truckee, one near Verdi and the other at Prosser Creek.—*Battle Mountain Scout*.

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Road to Scotty's Castle . . .

BEATTY—Senate and house approval of a \$33,400 appropriation to pave 4.7 miles of the road leading to Scotty's Castle in Death Valley is expected following favorable recommendation by the senate appropriations committee. Request for the fund was made by Senator Pat McCarran of

Nevada. Already approved is construction of more than 22 miles of an oiled highway from U. S. 95 to the Nevada-California state line through Esmeralda and Nye counties. Work may start this fall, it is hoped. The new link for which money is sought is located entirely within the Death Valley Monument.—*Beatty Bulletin*.

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THE *Desert* MAGAZINE
PALM DESERT, CALIFORNIA

Meteorite Believed Located . . .

TONOPAH — A large meteorite consisting of iron and nickel is lying at a depth of between 150 and 250 feet below bottom of a large depression about 11 miles north of Locke's ranch in Railroad Valley, according to James Gibson, geophysicist of San Gabriel, California.

Gibson made a detailed study of the crater in April with C. C. Boak. His conclusion is that only a meteor could have produced the mineral conditions he found in the crater. He estimated weight of the meteorite at between 100 and 500 tons—believes there should be no less than 200 tons of matter.—*Tonopah Times-Bonanza*.

May Create Railroad Shrine . . .

CARSON CITY—The historic Virginia and Truckee railroad station and its narrow-gauge engines and cars may be preserved if a plan of the Carson City chamber of commerce is carried out. Chamber officials have asked the Mills estate of San Francisco for permission to keep the old station intact and place the picturesque engines in front of it. The Virginia and Truckee ceased operations in May. It once hauled gold and silver by the millions from the Comstock lode.

Meanwhile, in Reno efforts were started to make from the old V. & T. right of way a bridle path, pedestrian way and farm service road.—*Battle Mountain Scout*.

Research Laboratory Approved . . .

RENO — Signature of President Truman has enacted into law a bill which provides for establishment of a rare and precious metals experiment station at the University of Nevada. The research center is expected to be of great value to mining interests throughout the state.

The government will now establish, equip and maintain a research laboratory at Reno which will be a center for information and assistance in matters pertaining to the mining industry, and for conservation of rare and precious minerals of the Sierra Nevada mining region. The bill authorizes \$750,000 to construct and equip the experiment station, and \$250,000 annually for maintenance and operation.—*Pioche Record*.

NEW MEXICO

Some Relief from Drouth . . .

LAS CRUCES—All the way from Albuquerque to Del Rio, Texas, July was a wet month in the Rio Grande Valley. Total for the month was more than for the preceding 11 months, bringing relief from the extended drouth.

There was some flood damage at Albuquerque and at other localized places, but first heavy rains in the Las Cruces area were contained by flood control dams built in arroyos leading down from the mesa east of the city.—*Las Cruces Citizen*.

Unusual—Lion Killing Sheep . . .

LORDSBURG — A sheep-killing mountain lion is rather unusual, according to Homer Pickins, assistant game warden, but a cougar has killed 20 sheep belonging to Jacobo de Herrera, who ranches near Cuba, New Mexico, it was reported to the predatory control division of the state game and fish department. Pickins said the last time he heard of a lion killing sheep was several years ago just north of Gallina. He killed that lion after it had destroyed five sheep. A state lion hunter has been assigned to the Cuba area to track down the predator.—*Lordsburg Liberal*.

Governor Backs Memorial . . .

TAOS — A proposal to purchase 19.43 acres of land adjoining the Kit Carson cemetery for creation of Carson Memorial Park has received the official support of Governor Mabry. He has authorized the state park commissioner to take an option on the land, now owned by the Taos Foundation, Inc. Thus the property will be held under option until the state legislature can act on the proposal to purchase the land for a memorial park.—*El Crepusculo*.

Here is the story of the courageous padre—Father Garces . . .

DUST ON THE KING'S HIGHWAY

By HELEN C. WHITE

He faced the hardships and the dangers of the desert trails alone, this Franciscan missionary of 175 years ago. He lived with the Indians, ate their food, administered to the sick. He was the first to carry the message of his faith to the Mojave and the Havasupai. In the end Father Garces died a martyr's death as he sought to establish the first mission at Yuma.

The story of this courageous missionary of the desert country is beautifully dramatized in a historical novel by one of the great historical writers of this generation.

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DESERT CRAFTS SHOP

Palm Desert, California

Widow of Geronimo Passes . . .

MESCALERO—Another link with the past was broken with the recent death of Kate Cross-Eyes, widow of Geronimo, last great chieftain of the Apache Indians and one of the most feared warriors of the old West. She was believed to be 94 years of age. Since 1914 she had lived on the Mescalero Apache reservation with her son, Robert, sole descendant of Geronimo. Kate Cross-Eyes was the chieftain's third wife. — *Gallup Independent*.

Low-Flying Eagle Hits Car . . .

SANTA FE—There are still eagles in New Mexico, and maybe they are picking up bad habits from airplanes that buzz the highways at times. At least, one low-flying eagle crashed into a state highway department vehicle and the driver, L. E. Heathcock, received a cut on the arm as result of the collision.—*Gallup Independent*.

Navajos to Buy Trading Posts . . .

GALLUP—The Navajo Indians of Arizona and New Mexico will be operating some of their own trading posts if deals now being negotiated are consummated. The Navajo tribe was scheduled to take over in August operation of the Wide Ruins Trading Post, which the tribe was to purchase from Mr. and Mrs. William J. Lippincott. Known also as Kinteel, this post was featured in the book *Spin A Silver Dollar*. A prehistoric ruin is located on the property involved. Culture is of the classical pueblo period, the same as at Mesa Verde National Park. A prehistoric spring has been uncovered and developed, is now sole source of water at the post.

Negotiations have also been underway for purchase by the tribe of other trading posts on the reservation. — *Gallup Independent*.

ANSWERS TO QUIZ

Questions are on page 13.

- 1—On top of one of three hills.
- 2—Nevada.
- 3—Beaver skins.
- 4—Salt River Valley.
- 5—Scheelite.
- 6—Goat nut.
- 7—Saguaro.
- 8—Prescott.
- 9—San Jacinto peak.
- 10—Bolton.
- 11—Confine their snakes for the annual snake dance.
- 12—White tail.
- 13—Little Colorado River.
- 14—Along the lower Colorado River.
- 15—San Juan.
- 16—Salt.
- 17—Apaches.
- 18—Navajo bridge.
- 19—Arrow and spearheads.
- 20—Author.

UTAH

Museum for Pioneer Relics . . .

CEDAR CITY—The Daughters of Utah Pioneers and the Sons of Utah Pioneers locally will soon have quarters for the preservation and public display of pioneer relics of early Utah. They are collecting from residents such items as oxen yokes, fireplace cranes, hand-wrought guns, garden tools, cooking utensils, baby cradles, art objects—and old photographs. The planned museum will be maintained to honor the staunch early settlers who pioneered the Utah country.—*Iron County Record*.

Old Debt Will Be Paid . . .

VERNAL—A 74-year-old debt that Uncle Sam owes the White River band of Indians is to be paid. The White River tribesmen will receive part of a recent \$31,500,000 award granted by the federal court of claims for Colorado land taken from the Ute Indians, who were moved to Uintah basin in Utah. Po-we-gup, 85-year-old chief of the White River band, is the only survivor of the original band of Indians who left their homes in Colorado and moved to Utah.—*Vernal Express*.

There Are Still Some Left . . .

MONTICELLO—In 1949 hunters in Utah killed a total of 60,478 deer. During the regular season 45,386 bucks were shot, and 15,092 more were killed in special deer hunts, according to the Utah Fish and Game commission. Over an 11-year period Utah has averaged a buck kill of 39,786, with 54 percent of the hunters getting deer. And there will be deer left to hunt next year. — *San Juan Record*.

Uncle Sam Settles with Utes . . .

WASHINGTON—The Ute Indians of Utah and Colorado have been awarded \$31,761,206 by the federal court of claims for more than 6,000,000 acres of land taken from them by the government. The award consists of four judgments. One, for \$24,296,127, is said to be the largest ever made against the government by the court.

The cash settlement is a final accounting for lands taken from the tribesmen by the government between 1891 and 1938. It is largely mountainous regions in western Colorado. The money awarded the Utes will not be available until it is appropriated by congress. The claim was based on an 1868 treaty in which 15,000,000 acres in western Colorado was set aside for the Utes.—*Salt Lake Tribune*.

Conservationists Fight Project . . .

WASHINGTON—Conservation and wildlife groups have announced they will fight to the finish against proposed construction of dams and reservoirs which would flood National Monuments. The announcement followed orders by Interior Secretary Oscar Chapman that the Reclamation Bureau draft recommendations for Echo Park Dam in Colorado and Split Mountain Dam in Utah—both on the Colorado River. Affected would be the Dinosaur National Monument in Utah.—*Tucson Daily Citizen*.

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COLORADO WOMAN WINS FEDERATION CONTEST

Mary Elizabeth Burwell, 960 Grant, Colorado, was voted the winner in the national insignia contest sponsored by the American Federation of Mineralogical Societies. So many excellent drawings were submitted from all parts of the country that the final decision had to be carried over to the meeting of the delegates at the Milwaukee convention.

Miss Burwell is a member of the Colorado Mineral society and the designer of its emblem, which was similarly selected in open competition a few years ago. Her latest drawing was judged as best showing the scope and purposes of the Federation. It includes a map of North America, the name of the organization, the tools of the collector (hammer and pick), the books he reads, and the crystals he finds and cuts.

Two speakers were on the July program of the Santa Monica Gemological society. Ben Berry, temporary president of the new lapidary association being formed in Southern California, outlined plans and purposes of the organization. Clarence Chittenden, past president of the society and now a geology major, talked on "What Geologists Don't Know." It was announced that the Santa Monica society will sponsor a rock, lapidary and jewelry show October 26 and 27. Vern Cadieux, vice president, will be in charge.

Slides showing minerals from all the 48 states were enjoyed by members of the Yavapai Gem and Mineral society, Prescott, Arizona, at their July 10 meeting. President Ernest E. Michael was narrator. He also reported on the Rocky Mountain Federation convention held in El Paso, Texas, and said the 1951 convention will be held in Phoenix. New Federation president is A. L. Flagg, Phoenix.

James Underwood of the Pacific Mineral society was speaker at July meeting of the Long Beach Mineralogical society. He discussed minerals of Montana. On July 23 Mr. and Mrs. Harry Ohlsen held open house for society members at their Wilmington, California, home.

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MINERAL EXHIBIT FEATURE OF KERN COUNTY FAIR . . .

All miners, operators, owners and collectors of Kern, Inyo, San Bernardino and Tulare counties, California, are invited to exhibit ores and specimens at the annual Kern County fair which starts the last part of September and runs for seven days at Bakersfield. John G. Maxwell, curator of the Desert Museum at Randsburg, has been appointed custodian of minerals for the fair. Details of filing entries may be obtained from Maxwell, P. O. Box 131, Randsburg, California.

Recently elected officers of the Coachella Valley, California, Mineral society have been announced as follows: Jack Lizer, president; Byron Phillips, vice president; George Roy, secretary; Miss Martha Danner, treasurer; Floyd Hamner, director. Society members this summer have enjoyed several social events, including swimming parties at Salton Sea and a barbecue that may become an annual affair.

Seventh birthday of the Lassen Rocks and Minerals society, Susanville, California, was celebrated with a field trip and campfire meeting at Diamond Mountain where members hunted in the petrified forest and in mine dumps near by. A campfire program was enjoyed in the evening.

Members of the San Diego Lapidary society did themselves proud at the San Diego County fair, held at Del Mar in July. Out of 14 entries in competition, the society won 11 prizes: four firsts, three seconds and four third prizes.

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TACOMA AGATE CLUB TO HOST 1951 CONVENTION

Since the next national convention of the American Federation of Mineralogical Societies is to be held in Tacoma, Washington, members of the Tacoma Agate club expect to get pointers on handling a convention by attending the Northwest Federation 1950 convention September 2 to 4 in Spokane.

Annual picnic of the Tacoma club was held August 6. All clubs in the region were invited to join in the fun. Many brought displays which were placed on exhibit.

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GEM CUTTERS GUILD IN BALTIMORE ORGANIZED

Through the determined efforts of one man to arouse interest in lapidary work in Baltimore, the Gem Cutters' Guild of Maryland was organized in April, 1950. James W. Anderson, who recently came to Baltimore from the west coast, brought with him a great love of and wide experience in lapidary work. Although in his early seventies, Mr. Anderson has given generously of his time and energy, and has trained scores in this art at his home.

Through him the Guild was formed and was incorporated May 2 with 28 active members. Those elected to offices were: Mr. Anderson, president; David E. Wallis, vice president, assistant secretary and treasurer; Leslie Mihm, secretary and treasurer; August Gross, program chairman; Charles W. Smith, field trip chairman.

There have been regular monthly meetings at Baltimore City College, and also two field trips. Both trips were very successful. The first was nearby here in Maryland to look for the stone for which our state is best known, Williamsite or serpentine, which resembles green jade. The second trip was just over the state line into Pennsylvania for cuprite rock.

"Inclusions in Gems" was topic of a talk by Victor Arciniega at a recent meeting of the Los Angeles Gem Cutters Guild. Members of the Guild believe they will be able to identify many stones by means of their inclusions, using the information given them by the speaker. Regular meetings of the Guild are the fourth Monday of each month at the Manchester Playground, Los Angeles. Visitors are always welcome.

A swapping bee created a great deal of interest at the barbeque and picnic of the San Jose, California, Lapidary society held at Alum Rock park in August. Regular displays by members were suspended for the month, but at September meeting those who are to exhibit are: Mrs. May Brodell, Carl Brooks, David Burridge, J. J. Cardoza, Mrs. Myrtle Cardoza, L. R. Cody, Alton Cook, Lloyd Douglass and Otto Ehlers. Five new members were voted into the society at July meeting of the board of directors.

An interesting program on dopping and preparation of stones for finishing was enjoyed by members of the Pasadena Lapidary society on July 20. The Faceteers met for a half hour preceding the regular meeting.

Next scheduled field trip of the Rand District Mineral and Gem association, Randsburg, California, will be Saturday and Sunday, September 9 and 10, to Greenhorn Mountain. It will be a crystal hunt. Any rockhounds or mineralogists are welcome to join the association's field trips. The September jaunt is an overnight trip.

August meeting of the Dona Ana County Rockhound club, New Mexico, was a picnic for members and their families. This followed a July field trip to look for chalcodony roses on top of a mountain in the Hillsboro region. Most club members camped out the night of July 22, the next day climbed the mountain to look for specimens.

FIRST MINERAL SHOW PLANNED AT BANNING

Plans are already being made for the first mineral show to be sponsored by the San Geronimo Mineral and Gem society, Banning, California. The show will be held in the Cherry Festival building, midway between Banning and Beaumont on highway 99. Dates are October 20, 21 and 22. There will be ample exhibit space, so nearby clubs and dealers may participate. Both the Banning and Beaumont chambers of commerce have pledged full support.

The South Bay Lapidary society is sponsoring its first show September 16 and 17 at Clark Stadium in Hermosa Beach, California. Exhibits will be open from noon to 9:00 p.m. Saturday and from 10:00 a.m. to 6:00 p.m. Sunday.

In July six members of the Searles Lake Gem and Mineral society, Trona, California, undertook the annual Telescope Peak climb. General membership of the society gathered in Homewood Canyon for the July meeting and enjoyed a potluck dinner.

A new feature at the Los Angeles County fair this fall—September 15 to October 1—will be an exhibit of gems and minerals put on by rockhounds themselves. Notice has been sent to mineral clubs, lapidary clubs and collectors telling them that space and facilities are available for the first time for a real rock show. The displays will be in the Palace of Agriculture. The department is sponsored by the Pomona Valley Mineral club.

A talk on gem stones and their true names plus displays of fluorescent material and of cut stones were enjoyed by 30 members of the Wasatch Gem society, Salt Lake City, at their most recent meeting.

The study of crystallography was made understandable to members of the Pacific Mineral society, California, by Victor Arciniega when he spoke at a recent meeting on "Identification of Gem Stones as Minerals." He explained double and single refraction and how to test specific gravity by mixing solutions in a beaker and dropping in different minerals and checking the level at which they float.

The gem cutting hobby is the third largest and fastest-growing craft hobby in United States today, according to Leland Quick, editor of the *Lapidary Journal*. When a meeting was called recently in Cleveland, Ohio, to organize a lapidary society more than 500 were present. Los Angeles County, California, alone has more than 50,000 gem-cutting hobbyists who own some form of lapidary machinery, it is estimated.

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RECORD ATTENDANCE AT CONVENTION EXPECTED

The Columbian Geological society, Inc., is host club for the annual convention and show of the Northwest Federation of Mineralogical Societies, scheduled to be held September 2 and 3 in the state armory, Spokane, Washington. According to P. N. Brannan, convention chairman, a record attendance is anticipated this year. Doors of convention hall open to the public at 10:00 a.m. Saturday, September 2. Specimens will be on display through Monday morning, if possible. There will be both non-commercial and commercial exhibits.

Members of the Rockhound club of Lordsburg, New Mexico, exchanged information and lore on gems and minerals and examined mineral specimens under a mineral light at the club's June meeting. Refreshments were served.

Specimens of agate were brought by members to the July potluck dinner meeting of the Sequoia Mineral society, held in the Reedley, California, city park. The displays turned out to be as good or better than the jade exhibit at the society's previous meeting. Pete Eitzen of Reedley gave a talk on agates.

Looking ahead to October, the San Diego Lapidary society is planning to present an exhibit of some of the best mineral and gem collections of members. The exhibit will be on display at Recital hall, Balboa Park, San Diego, California, October 14 and 15. The display will be open to the public.

The California Federation of Mineralogical Societies has announced that with acceptance of two new societies the Federation now has a total of 59 societies and a membership of more than 5000. New societies accepted are the Whittier Gem and Mineral society and the Convair Recreation association of San Diego County. Whittier has 62 members, Convair 80 members.

First annual gem and mineral show of the Compton, California, Gem and Mineral club is scheduled for September 30 and October 1 at the Civic Center auditorium in Compton. There will be no admission charge. Al Cook is general chairman of the show.

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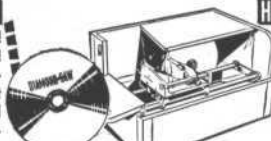
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NEW CLUB PLANNING ITS FIRST GEM SHOW

Organized only last year, the Compton, California, Gem and Mineral club has announced its first annual show will be held September 30 and October 1 in auditorium of the Compton Community center, 123 North Rose avenue. Hours on Saturday, September 30, will be from 2:00 to 10:00 p.m., and from 10:00 a.m. to 8:00 p.m. on Sunday, October 1. Regular meeting time of the club is the second Tuesday of each month at 8:00 o'clock, at the Community center.

New address of *Mineral Notes and News*, official journal of the California Federation of Mineralogical Societies, is P. O. Box 204, Ridgecrest, California. The address has been changed since Ralph W. Dietz and Don MacLachlan took over as business manager and editor respectively. Paul VanderEike, for years editor of the publication, has retired and is now editor emeritus.

The Rocky Mountain Federation of Mineral Societies has resumed publication of its official bulletin, *Mineral and Gem News*. The bulletin had been suspended for a year. It is a mimeographed sheet.

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TELLS HOW HE FOUND JADEITE 'IN SITU'

The finding of jadeite "in situ" at Clear Creek, San Benito County, California, following the alluvial discovery made by the late Phil Bolander, Oakland, early this year—a find that aroused interest all over the nation—is described by William U. Inman, Palo Alto, who prospected the area and located a claim. Bolander died February 12 before it had been established that the jadeite did occur in situ.

The Bolander find was a single stream-worn boulder from the bed of Clear Creek near Hernandez, California. But Inman believed jadeite would be found there in situ. So on March 7 he set out on a prospecting trip and before sunset found alluvial jadeite in fair quantity. On March 8 he discovered jadeite in situ as several distinct outcrops or lodes.

Specimens were taken to Dr. C. M. Swinney at Stanford. Extensive tests indicated the mineral was jadeite rather than diopside. Since the lodes were accompanied by other interesting minerals, Inman posted his claim and by now there are two jadeite mines operating—the first in the United States. They are the Wildcat mine and the Clear Creek mine.

Scientists of the Smithsonian Institution are studying the Clear Creek occurrence, and Inman points out that more specific statements regarding the Wildcat and Clear Creek in situ jadeite must await more complete laboratory investigation.

A hunt for thunder eggs in Mint Canyon was the August field trip for the Southwest Mineralogists, Inc., Los Angeles. This followed their August meeting at which colored slides of exotic orchid and jungle cactus were shown. Looking ahead to October, the society has planned a special program that is called Field Trip night. This will be on October 9 when members and guests are to come in field trip clothes—but there will be dancing and refreshments. Those attending are urged to bring cutting material and minerals for trading.

The Feather River Gem and Mineral society, Oroville, California, is in the midst of a building program which they hope will result in a fine permanent home for the society. Members are donating time, money and labor.

October 15 is closing date for the American Federation contest open to young men and women under 20 and not yet in college. Contestants may choose as subject of their papers: minerals, fossils, gems, geology or any other earth science topic. Entry blanks may be obtained by writing to Prof. R. M. Pearl, Colorado College, Colorado Springs, Colorado.

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AMATEUR GEM CUTTER

By LELANDE QUICK, Editor of The Lapidary Journal

There is seldom anything really new in lapidary technique but when it does occur it is offered here. The thing causing the widest investigation and attention at the moment is wet sanding. It has caused so much favorable comment by those who have tried it recently that one of the largest manufacturers of lapidary equipment is bringing out a wet sanding unit about September 1. The name will be supplied upon request if you send us a self-addressed postal.

Possibly it is because this method (not new but little used) polishes jade to a mirror finish that it is attracting so much attention. Wet sanding is just that—water applied to a sanding disc; usually with a paint brush but preferably with a fine spray controlled by a pedal so that the hands are free.

The greatest advantage of wet sanding is that heat is reduced and many stones that would otherwise be ruined are saved. And by reducing the heat on the surface being sanded you also reduce the heat on the softer spots of some stones and thereby prevent their being pulled out. This causes pits and undercutting, the chief grievances of the cabochon cutter. Wet sanding also eliminates the "lemon-peel" finish. This is a headache to the jade polisher.

The most successful method reported to us uses a series of four discs padded with rubber and covered with No. 150-225-400-600 sanding cloth. If the gem develops white spots it indicates that the cloth is getting dry and more water should be applied. In polishing jade the No. 600 cloth is allowed to run dry after the cabochon is finished. Then the stone is lightly touched with a rolling motion to the dry wheel and a high luster is attained before going to the polishing buff. Of course the new Jade-Luster powder has a lot to do with the best polish on jade we have ever seen. We have seen professional lapidaries and jewelers amazed when they see our jade cabochons polished on wet sanders with the new powder. Send us a self-addressed reply postal if you want to know where to get this new powder.

The Clark County Gem Collectors of Las Vegas, Nevada, have extended direct invitations to about 40 gem and mineral societies to join them in a two-day field trip to a new flower agate location near Hoover Dam. Only three persons at this writing know where this spot is and no one has ever cracked a rock there before. We have seen cabochons cut from this material and they are beautiful. The material looks like eastern golden-rod in a background of red—the favorite combination of colors of amateur gem cutters.

Here is an excellent opportunity for *Desert Magazine* readers belonging to no society and who have longed to go on a field trip to do so. We have been authorized by those in charge to urge everyone to come. There is only one courtesy required—let your host know you are coming so

that adequate preparation will be made for you. If you are coming with your society group the secretary's report is all that is necessary. All reservations should be sent not later than October 1 to Paul O. Drury, Box 1028, Las Vegas, Nevada. This big event will take place on Saturday and Sunday, October 7 and 8, at Boulder Beach, Nevada.

Through the courtesy of George F. Bagley, superintendent of the Lake Mead National Recreational Area, U. S. Department of Interior, the use of Boulder Beach and camp ground, with its adequate sanitary facilities and special accommodations, has been reserved. This choice of campsite and bathing beach suggests the possibility of a swim in famous Lake Mead on your return from the newly found agate bed.

There will be ample opportunity for members of this mass field trip to take a guided tour of Hoover Dam and attend a color slide lecture by Russell K. Grater, chief park naturalist, whose subject will be "The Ancient Landscapes of the Lake Mead Region," followed by square dance music around the campfire.

All who attend are requested to check in and sign the register at the park ranger station located at the entrance to Boulder Beach, to be assigned a campsite.

For those who do not care to camp a lodge is available a quarter-mile away from the campsite with good dining facilities. Motel accommodations are available at Boulder City which is five miles away. Guests may arrive on Friday night if they wish. Ample fire wood for cooking is supplied and drinking water is piped to the campsite.

The field trip party will leave the gate at 8:00 a.m. on October 7. It is located at the eastern end of Hoover Dam at the top of the hill, on the Arizona side. Late comers may proceed southward on the Kingman Highway No. 93 and turn in at the sign for the field location which will be erected by guides when they take the 8:00 o'clock party in. Carry lunch and adequate water. Return from the flower agate location at your convenience. Guide service is maintained for tours through Hoover Dam, leaving approximately every ten minutes. In the evening guests at the campfire will enjoy square dance music by a western cowboy band. There will be a return to the flower agate location at 8:00 a.m. on Sunday if you desire. If there is a sufficient demand, President Bill Brown will lead an informal group to the Park onyx field or the green jasper location.

This promises to be the biggest rock-hound pow-wow in history. It is an unparalleled location with plenty of interest and good material. We'll be there and hope to meet many of our readers. In conclusion we offer, in the name of all the gem-cutting fraternity, profound thanks to the Clark County Gem Collectors for their unselfish planning and generous attitude.

This page of *Desert Magazine* is for those who have, or aspire to have, their own gem cutting and polishing equipment. Leland Quick, who edits "The Lapidary Journal," will be glad to answer all questions in connection with your lapidary work. And he would like details about new short cuts or devices which lapidary workers have discovered, to pass on to readers. Queries and information should be addressed to *Desert Magazine*, Palm Desert, California.

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COVINGTON LAPIDARY SUPPLY
Redlands, California



By RANDALL HENDERSON

FOR NEARLY three quarters of a century far-visionsed Americans have found it necessary to wage a constant battle for preservation of the National Parks and Monuments. These areas were set aside for the enjoyment and education of all Americans—but there has always been opposition from private interests who sought to exploit them for personal gain. The lumbermen wanted to cut the timber. The miners wanted to gouge into them for mineral wealth. The cattlemen wanted them for range.

Thanks to the leadership of such men as Theodore Roosevelt, Gifford Pinchot, Horace Albright, Harold Ickes and many others, the park system has been preserved without serious inroads. As population and travel increased, it has been expanded to provide accessible playgrounds for nearly every part of the United States.

But now a new threat has appeared—coming from an agency of the government itself. Recently Secretary of Interior Oscar L. Chapman gave approval to the Reclamation Bureau's proposal to invade the Dinosaur National Monument in northeastern Utah and northwestern Colorado with power dams which would inundate a scenic portion of the Green River system. The plan is known as the Echo Park and Split Mountain project.

Fortunately, Secretary Chapman does not have authority to make the final decision. The dams can be built only if congress appropriates money and the president signs the act. It is needless to say that every conservation group in the United States will oppose the project.

The Echo Park dam would inundate one of the most spectacular chasms along the Green River. It is known as Lodore Canyon. John Wesley Powell lost one of his boats in this canyon during his historic voyage down the Green and Colorado Rivers in 1869-70. Powell wrote of this region:

"On the east side of the canyon, a vast amphitheater has been cut, with massive buttresses, and deep, dark alcoves in which grow beautiful mosses and delicate ferns, while springs burst out from the further recesses and wind, in silver threads over floors of sand rock. . . . Yellow pines, nut pines, firs and cedars stand in extensive forests on the Uintah mountains, and, clinging to the rocks and growing in the crevices, come down the walls from Flaming gorge to Echo Park. The red sandstones are lichenized over; delicate mosses grow in the moist places, and ferns festoon the walls."

The proposed dams are for power development. No irrigation is contemplated. Engineers have testified that other sites along the Green River are available without the necessity of destroying the natural beauty of Lodore Canyon.

The danger in this proposal is not alone in the immediate destruction of scenic and historic landmarks, but

in the precedent that will be established. If the Reclamation Bureau can usurp the rights which have been established for you and me in the Dinosaur National Monument, then it may be expected that the invasion of other park areas will come eventually.

The time may come when our population will become so dense and our power resources so inadequate that it will appear necessary to destroy the natural beauty of Lodore Canyon. But that time is still far away. For the present I feel it should be preserved for the purposes for which it was planned when brought into the national park system.

• • •

John Hilton called my attention to something I had not noted before—that in this year of drouth on the desert many species of cacti bloomed more profusely than usual.

The seeds of the annual wildflowers remain dormant in the sand awaiting the time when there will be ample moisture. But the perennials somehow must carry on without their normal supply of moisture. In the face of this threat to their existence they produce an abundant crop of seeds—for the perpetuation of their species.

I saw the same natural law at work in Palm Canyon several years ago following a fire which swept through and charred the trunks of the trees and burned the fronds to a crisp. But the hearts of the trees remained alive—and the next season they produced a record crop of seeds. Perpetuation of species—it is one of Nature's laws which we humans do not fully understand. When knowledge of these laws becomes more universal there will be less grief among the humans who live on this planet.

• • •

It is to be hoped that the present emergency will not become so serious as to require the rationing of gasoline. For, under the stress of war conditions it is more important than ever that folks living and working in the cities and industrial centers have the opportunity occasionally to get out where the air is pure and Nature's world is going along undisturbed by the shooting in Korea and the depressing headlines of the newspapers at home.

Probably we will have more visitors than usual in the desert country this fall—people who will come out here for a few hours or days of release from the pressures of the commercial world in wartime.

I hope these visitors will not spend all their time in the pampering environment of luxurious resorts. For it is in the secluded canyons and remote mountains that the medicine gods of the desert country hold their clinics. There are a hundred thousand camping spots where in the peace and stillness of the night one may sleep on the ground and draw strength and courage from the good earth.

BOOKS OF THE SOUTHWEST . . .

ARTIST-COWBOY WRITES OF APACHE DAYS IN ARIZONA

Ross Santee, one of the best known Western artists and a successful author, has written another book on the country he knows and loves so well. *Apache Land* has cowboy flavor, for Ross Santee was a cowboy. His book is full of interesting anecdotes and facts about the Apaches, Indian agents and military men who lived through the hectic early years of Arizona. In his tales, he makes the old Apache warriors live—Cochise, brave and honorable until the treachery of whites drove him to revenge; cruel and unscrupulous Geronimo, lesser known Eskiminzin who, in spite of tragedy and personal injustice suffered at the hands of the whites, yet always counseled peace.

Santee had great respect for the famed scout Al Sieber. He felt that the history of Arizona would have been very different had not one of his military heroes, Gen. George Crook, been recalled from duty in Arizona during those critical times, for Crook had rare understanding of the Apaches.

Santee's portrayal of some of the characters in his book is delightful. There was Grandpa Harer, man of peace, whom the Apaches trusted and loved, and Ole Jim Whitehead, the Apache friend to whom the book is dedicated.

But it is not always a pleasant story, for the author tells frankly of broken faith and injustice on the part of the white invaders of the Apache homeland. Santee feels the Indians are making good progress in their assimilation into the white man's civilization, though there is a trace of regret that in the change they are losing important values which are part of the Apache tradition.

Over 100 of the author's original drawings add much to the interpretative value of this book.

Published by Charles Scribner's Sons, New York. 216 pp. Ills. \$3.50.

*This book may be ordered from
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MOUNTAIN MAN OF THE 20TH CENTURY

Ole Ben Lilly was the greatest hunter the Southwest has known since the passing of Jedediah Smith, Old Bill Williams and the Mountain Men of the last century. Born in Alabama, most of his 80 years were spent on the trail of bear and panther in Louisiana, Texas and New Mexico.

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together over a period of 20 years by J. Frank Dobie, and told with the skill and understanding that are characteristic of all this author's work. The title, *The Ben Lilly Legend*.

With his pack of dogs, Lilly would follow the trail of a bear for weeks with no thought of his personal comfort. He slept where night found him, and if it were cold he curled up between his dogs. If he had been without food for two or three days, as often happened, he would gorge himself with bear meat after the kill had been made. Unkempt in personal appearance and an unrelenting enemy of bears and lions, he was a gentle and kindly man and often carried his Bible in his pack.

Ben Lilly was a Mountain Man of the 20th century, and in the writing of his biography Frank Dobie has preserved much of the wilderness lore which the hunter acquired during a lifetime of intimate association with the wildlife of the Southwest.

Published by Little, Brown and Co., 1950. 237pp., Index. Halftone ill. \$3.50.

*This book may be obtained at
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For the Motor Traveler . . .

James E. Lewis has published the 1950 edition of his annual *Doorway to Good Living*, a guide book covering California, Arizona and Nevada. Presented in alphabetical order are brief descriptions of the scenic points of interest, and accommodations available in the communities along the way. The guide has been in annual production since 1946, and is carefully revised each year. Published by

the Lewis Publicity Service. 128pp. with photographs and maps. \$1.00.

Handbook for Desert Gardeners . . .

Where water is available it is just as easy to raise flowers and vegetables on the desert as anywhere else. Different soils in some areas require different methods—but it is a healthful and satisfying hobby for those who will take the time for it. One of the few printed books on the subject is *The Nevada Gardener's Handbook*, published by the Agricultural Extension service of the University of Nevada at Reno. This 80-page illustrated bulletin is available to Nevadans without cost, to non-residents of the state for 25 cents.

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